The Health Bulletin

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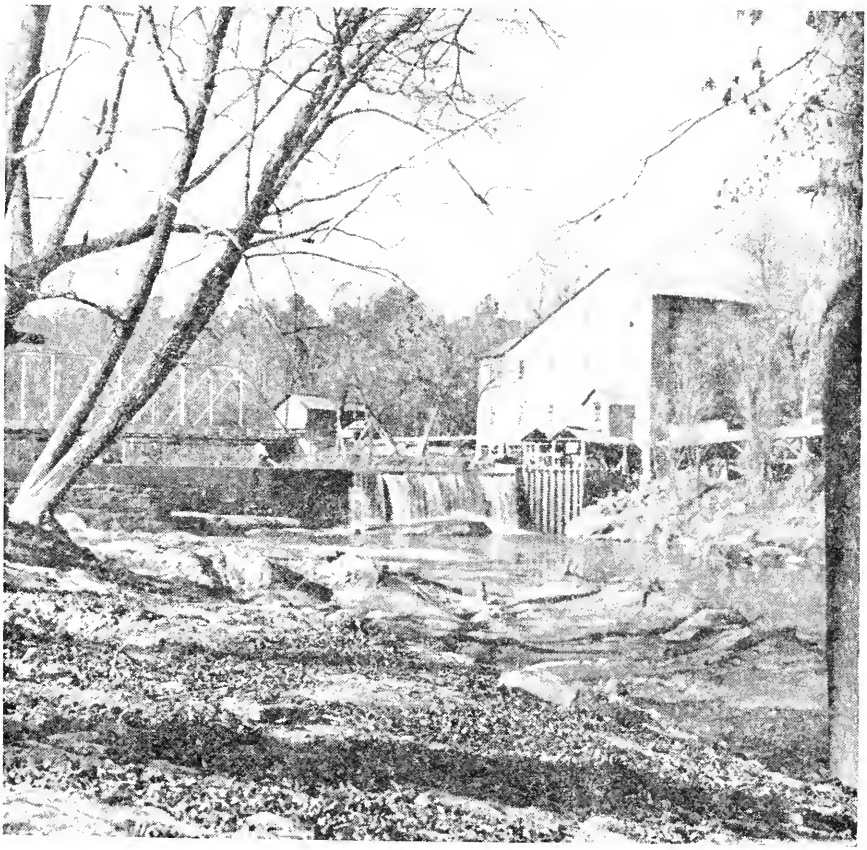

CONTENTS

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CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

A Health Project

By

CARL V. REYNOLDS, M.D.

North Carolina State Health Officer

The cooperation of the State Board of Health recently was asked and gladly given in the execution of a good health movement that deserves to be publicized throughout the State; and, to that end, I sent a personal representative to bring me the facts, that I might pass them along to the public. We find here a conspicuous example of how management and labor can cooperate to mutual advantage and for the public good.

Thomas J. Pearsall of Rocky Mount, general manager of the M. C. Braswell Farms, consisting of 22,000 acres in Nash and Edgecombe counties, 5,500 of which are under cultivation, will go down in the public history of North Carolina as a pioneer. He has set an example in humanitarianism and sound economy that should, and perhaps will, be followed by others, in our effort to supply what has been termed the "Number One Need" of this State at the present time—good health.

Living and working on the farms supervised by Mr. Pearsall are 140 families, consisting of 900 persons, seventy-five per cent of whom are Negroes. So familiar is the superintendent with these people that he can address almost every one of them by name and has familiarized himself with their problems. When one of them is unable to carry on, he knows the reason and endeavors to do something about it.

He recently conceived the idea that a mass health survey of the farm population under his supervision should be made by competent public health authorities.

Not an Idle Dream

Nor did Mr. Pearsall stop after he had made a mental blueprint of the health needs of his farm population. He contacted the county health officers of Nash and Edgecombe, namely Dr. J. S. Chamblee and Dr. Robert F. Young, whose departments worked with him in securing a mass health survey that was carried out at Battleboro, on December 16 and 17.

Early on the first day, everything was in readiness. Hundreds had gathered in the community house at Battleboro, where the survey was to be made. Outside was a mobile unit of the State Board of Health's Division of Tuberculosis control, fully staffed and in operation, making x-ray chest pictures.

Inside, public health workers were busy registering those who were to undergo complete physical check-ups. As fast as the blanks were filled out, the farm workers proceeded to submit themselves for examination.

They Are Going for Health

Bee-Hive Activity

In the rear of the building, public health personnel was taking blood samples for blood tests, to be run at the State Laboratory of Hygiene, in Raleigh, of which Dr. John H. Hamilton is the director. In the main assembly room, a public health dentist was examining teeth. Each person filled out a blank stating whether he or she had ever been treated for disease of the lungs, heart, kidneys, eyes, ears, throat, tonsils, or for rupture, deformed limbs, or any venereal disease.

Also, there was a complete check-up as to whether all children under six had been vaccinated for diphtheria and whooping cough. The names of those who had not were listed, in order that this protection might be administered.

Complete examinations were confined to the personnel of the farms. However, the privilege of having chest x-ray pictures made was extended to any person living in the two counties.

Representing the State Board of Health were Dr. Thomas F. Vestal, director of the Division of Tuberculosis Control, and Dr. Earnest A. Branch, director of the Division of Oral Hygiene. By lunch time, hundreds of x-rays had been taken, with more to follow in the afternoon, the total for the first day numbering about 500.

Monday was confined to the examination of those living in Nash county, while Tuesday was devoted to those from Edgecombe, across the railroad.

Just Another Step

The mass examination of the 900 farm workers was by no means the inauguration of Mr. Pearsall's program to improve the condition and give health protection to the tillers of 5,500

acres producing cotton, tobacco, peanuts and corn as a major crop.

Home Economics at Work

This is evidenced by the fact that for sometime he has been utilizing the services of Miss Balmerlee Watson, farm and home supervisor, who not only conducts the services rendered at the community house in Battleboro, but also makes visits to individual homes, studying the needs of the occupants.

To the rear of the community house is a cannery, where during the past season, under Miss Watson's supervision, the farm families put up out of their share of what they produce, 18,000 cans of meats, fruits and vegetables for their personal use. Each family has a milk cow of its own and raises its own meat.

The farm and home supervisor has the women to bring their sewing to the center where she supervises it, as well as teaching them to sew at home. "Miss Watson has done excellent service for these people," Mr. Pearsall said. At the time he was standing in the rear of the x-ray truck, lifting small Negro children to the ground after chest pictures had been taken.

He Tells "Why"

"Just why did you arrange for this health survey?" Mr. Pearsall was asked. "Because I think it ought to be done," he replied; "not only on these farms, but on farms and in factories, schools and all other establishments throughout the State. It is not only the humanitarian thing to do, but it is good, sound economy. We must not only know what our health needs are, but we must see to it that these needs are met, if we expect to develop a strong, healthy North Carolina.

Health Records Are Being Made

All-Aboard for the Fight Against Tuberculosis

Lined Up for Health

Action to Follow

"What do you propose to do about it?" Mr. Pearsall was asked. "That is, when you have found what physical deficiencies exist among your farm population, do you propose to let it go at that?"

"Certainly **not!**" he said. "What is the use of knowing a thing and then doing nothing about it? The defects found here today and tomorrow are going to be remedied if possible, in one way or another, and we intend to see to it that they are. To this end, we propose to utilize existing public health facilities, to make an effort to have these facilities still further expanded, and, in some instances, to refer cases to private practitioners of medicine and dentistry, depending upon the patients' ability to pay. But, in any event, we are going to do something about it all. That's why the survey is being made."

Medical Care Program Includes Medical School

By
JOHN H. HAMILTON, M.D.
Raleigh, N. C.

The program for medical care which has been placed before the General Assembly is not a hastily concocted scheme but a carefully considered plan which has been evolved by many people who have worked through the years. It is not the brain-child of one person or of a small group. The Presidents and past-Presidents of the Medical Society of the State of North Carolina, as well as the rank and file of the medical profession, have helped to study and prepare the program but the doctors have no selfish interest nor monopoly in it. Although many able North Carolinians have contributed thought and talent to it, the program is not entirely the product of North Carolina thought. Seven men, not residents of the State, but who are recognized throughout the nation as authorities on the broad phases of medicine and health problems, were selected as a National Committee to investigate, study and present recommendations. Their report has been carried almost in its entirety in The Health Bulletin. Their recommendations may be summarized as follows:

1. Greatly expanded and improved general hospital facilities;
2. Establishing a prepayment plan for defraying the cost of hospital care;
3. Expanding and improving public health facilities;
4. A state constructed and operated four-year medical school to be located at Chapel Hill.

All seven agreed on the first three recommendations. Only on the Four-year Medical School at Chapel Hill was there a difference of opinion and there the vote was five to two. When the problem was submitted to Executive Committees, to Commissions and to various groups, including farmers, doctors, teachers and lawyers, the majority vote has been for the entire program.

When a person or a group opposes a program the usual procedure is to pick out one part for criticism while praising the rest of it. If it be a wagon or an automobile three of the wheels are all right, but there is something wrong with the fourth wheel. Perhaps the opponents might admit that the

vehicle would not run as well on three wheels as it would on four but they just cannot approve that fourth wheel. So it is with our Medical Care Program —It is the Four-Year Medical School at Chapel Hill which is the rallying point of opposition—Just what are the objections?

They say that North Carolina already has two Four-year medical schools. We do have two four-year medical schools located in the tate. They are good medical schools and we are proud of them. They are endowed institutions and secure no appropriation of tax money. They cost the tax-payers nothing. From the money standpoint it would seem that our opinion about another four-year school should be formulated without thought of our existing schools which cost us nothing. If the opponents of the Chapel Hill school could assure us that the existing schools would supply the state with enough doctors to make up our deficiency, they could show us that we do not need another school. What are the facts? Duke Medical School was established in 1930. It has graduated fifteen classes. We are informed that eighty-four of these graduates are practicing in North Carolina. We know several of these young physicians—they are an honor to the medical profession. During the past sixteen years many more physicians have died in the State than have been graduated from Duke and located in the State. In the freshman class of 1945-46, 15 of the 72 students in the class are listed as residents of North Carolina. This class includes students from twenty-four states. At Bowman Gray Medical School—out of a freshman class of 51 —21 are residents of the State and sixteen states are represented.

Endowed Medical schools have a tendency to develop a desire to become national instead of local institutions. Some of them frankly admit that they give preference to students from remote places. If two young men, identical in academic attainments and other qualifications, were to be on the list of applicants for one vacancy in the freshman class and one of these equally qualified men was a hometown boy and the other lived 1500 miles away, the 1500 miler would be the one admitted. All medical schools have more applicants than they can possibly accept as students. That the state supported schools give preference to students from their own states and that students living in states which support a medical school prefer their state medical school is shown in the following list:

Name of Medical School	Number Freshmen Students	Students Who Are Residents of State
Medical College of Alabama	53	29
University of Arkansas School of Medicine	73	41
University of California Medical School	68	60
University of Colorado School of Medicine	65	33
*Emory University	60	23
University of Georgia School of Medicine	76	49
*Loyola University School of Medicine, Illinois	88	34
*Northwestern University Medical School	134	19
*University of Chicago School of Medicine	65	2
University of Illinois College of Medicine	164	131
Indiana University School of Medicine	81	63
State University of Iowa College of Medicine	82	46
University of Kansas School of Medicine	74	38
University of Louisville School of Medicine	86	31
Louisiana State University School of Medicine	82	37
*Tulane University School of Medicine	125	18
*Johns Hopkins University School of Medicine	70	7

Name of Medical School	Number Freshmen Students	Students Who Are Residents of State
University of Maryland School of Medicine	82	23
University of Michigan Medical School	124	47
*Wayne University College of Medicine, Detroit	67	35
University of Minnesota Medical School	99	60
University of Mississippi School of Medicine	29	22
University of Missouri School of Medicine	40	22
*St. Louis University School of Medicine	104	16
*Washington University School of Medicine, St. Louis	87	32
*Creighton University School of Medicine, Omaha, Neb.	61	10
University of Nebraska College of Medicine	85	27
University of North Carolina School of Medicine	47	28
*Duke University School of Medicine	72	15
*Bowman Gray School of Medicine	51	21
University of North Dakot aSchool of Medicine	29	16
University of Cincinnati College of Medicine	88	50
*Western Reserve University School of Medicine, Ohio	84	42
Ohio State University College of Medicine	83	61
University of Oklahoma School or Medicine	72	48
University of Oregon Memical School	73	31
Medical College of the State of South Carolina	59	39
University of Teenessee College of Medicine	139	52
*Meharry Medical College	51	3
*Vanderbilt University School of Medicine	51	12
*Southwestern Medical College, Dallas, Texas	66	37
*Baylor University College of Medicine	82	44
University of Texas School of Medicine	98	65
University of Utah School of Medicine	48	30
University of Vermont College of Medicine	40	11
University of Virginia Medical Department	66	14
The Medical College of Virginia	80	31
West Virginia University School of Medicine	30	18
University of Wisconsin Medical School	65	51
*Marquette University, Milwaukee	96	24

*(Endowed institutions without state or municipal appropriations)

We have not included states such as Massachusetts, New York, Pennsylvania with old and well endowed medical schools and which do not have medical schools supported by tax funds since there is no element of competition with the state school.

It is true that state supported medical schools charge smaller tuitions for residents than they do for non-residents. This is generally expected or required by the legislative body making the appropriation. The responsiveness of the state school to public will is also manifested in other ways. For instance, if the State Health Officer requests an endowed school to give its students a course in preventive medicine, the answer may be a definite **no.** The same request to a state school may and has resulted in a School of Public Health.

It would seem somewhat like bad manners to take up the time of a class made up of 15 North Carolinians and 57 residents of other states by telling them about North Carolina's hospital system, North Carolina's health department, North Carolina's health program, North Carolina's need for doctors in rural communities, North Carolina's economic conditions and North Caro-

lina's people, their problems, perplexities, hopes and aspirations. Yet instruction of this sort would be right, proper and helpful in a state supported school having classes composed principally of young North Carolinians. In fact, if our State is to hold its young doctors while our per capita income is low, these young doctors must know about the service which they can render in building a better state. Most youngsters who enter the medical profession do so primarily for the pleasure which they will derive from trying to heal the sick and secondarily for the purpose of earning a respectable living. If it is money which the youngster desires, a more profitable and less expensive education should be sought than a medical education. The state school might be able to add to the medical profession physicians who take pride and pleasure in contributing to the state's well-being as well as satisfaction in the practice of scientific medicine.

It would seem that any discussion of the relative merits of endowed schools and state operated schools as related to their financial stability and the effect of politics upon them would be foreign to the medical care program. The issue has been raised by one who states that medicine can best be taught in an endowed school. It is true that many innovations and improvements in medical education have been brought about by endowed schools. It is equally true that many of our best medical schools are operated by states. Any innovation or improvement can be and has been adopted by state schools. We have pointed out that the state school is generally more responsive to public opinion. This may be due to politics which is alleged to interfere with state schools. There are many kinds of politics and politics is omnipresent. We have seen partisan politics, church politics, school politics and even medical politics. It occurs in some form wherever three persons assemble. It is claimed that endowed schools have a more stable financial foundation—yet even their security is only relative. The Baltimore fire of 1904 almost wrecked Johns Hopkins. A prolonged period of inflation would wreck any endowed institution. The honorable record of the University of North Carolina in the field of education should be sufficient assurance that a creditable medical school can be conducted by it.

The fact that all medical schools have a waiting list for students who wish to study medicine makes it difficult for a student of a two year school to gain admission to a school where they can get their last two years of training. The only chance which a student attending the two-year school at Chapel Hill has of gaining admission to a four year school is to find a school where a student has dropped out, either because of deficient scholastic attainment, because of financial difficulties, because of ill health or because of a change of purpose. There develops in the second year man at Carolina an anxiety which grows in intensity until a place can be found where he can finish his course. In the past practically all of them have found places where they could finish their work and secure their degrees. Many have had extreme difficulty in finding a four year school which had a vacancy and have gained admission only after much effort. In all probability there will be even fewer vacancies in the future. Waiting lists make it possible for schools to select students who are better prepared and more determined. The G. I. Bill of Rights provides financial aid. It would, therefore, seem that most of the vacancies which will occur in the four year school will be due to the ill health of students who have registered in them.

The question has been raised about establishing a four year medical school in a village the size of Chapel Hill. There seems ample evidence that good medical schools can be and have been conducted in small towns. The University of Michigan Medical School was established at Ann Arbor in 1850. In 1880, thirty years later, Ann Arbor had a population of 8,061. There were no

good roads any where then. There was no rapid transportation as we know it now. There were no automobiles. Ann Arbor in 1940 had a population of 29,182. The University of Iowa College of Medicine was organized in 1869. It is also recognized as a good school. Iowa City in 1890 had a population of 7,016. In 1940—17,182 lived there. The University of Kansas School of Medicine was organized in 1880. The population of Lawrence at that time was 8510 and in 1940 it was listed as 14,390. The University of Virginia Department of Medicine was organized in 1827. Charlottesville in 1890 had a population of 5,591—in 1940—19,400. If in 1890 a man had stated that he was going to Rochester, the assumption would naturally have been that he was going to New York State. At that time Rochester, Minnesota, had a population of 5,321 and the Mayo name had not the meaning that was later attached to it. The Mayo's Rochester was found by the census takers to have a population of 26,312 people in 1940. It would seem that good medical schools as well as good medical centers can be developed in small towns.

Does anyone claim that there is a city in North Carolina which is large enough to furnish all by itself sufficient clinical material to supply the teaching needs of a medical school. We have no walled cities in this state. Even if we did, the state would be unwilling to supply that city with a hospital and a medical center which could be used only for citizens of that city. What is proposed is a teaching hospital and medical school for all people of the State.

There are those who say that it would be impractical to have two medical schools within twelve miles of each other. It would seem that the person who thought that one up did some mighty hasty and wishful thinking. There are numerous instances in which top ranking medical schools are considerably less than twelve miles apart. If we keep in mind that it is the people of the state for whom we are making plans, it would seem desirable to have the school and its hospital near the center of the State. The geographical center of North Carolina is only a few miles from Chapel Hill. There are numerous advantages in having two schools close together. An outstanding authority could lecture to both student bodies. A professor in one institution might conduct courses in the other school as was the case when a professor in the School of Public Health at Chapel Hill taught Preventive Medicine at Duke Medical School. An interesting exhibit, demonstration, or unusual patient at one school could be seen by students of its neighbor. When one institution has more patients than it can accommodate, it might be possible to care for these at the nearby hospital. This is not fanciful advantage. A competent observer has stated that there are now enough patients turned away from Duke Medical School to run another medical school. A healthy rivalry could and should exist without the development of antagonism.

A very clever and adroit opponent of the four year school of medicine, which was recommended by five of the seven members of a National Committee and approved by the Medical Care Commission and its Committees, claims that his chief reason for opposing the four year medical school is:

"Another four-year medical school in North Carolina will be constructed and operated with funds that are needed for our general hospitals and by our mental hospitals."

The first argument offered to support this objection seems to be quite beside the point. It suggests the inconsistency of Dr. W. T. Sanger, a member of the National Committee engaged by the North Carolina Medical Care Commission. Dr. Sanger was also a consultant to the State of Mississippi. For North Carolina, Dr. Sanger was one of the five members of the Committee recommending a new four year medical school as well as more hospital beds for both general and mental patients. For Mississippi, Dr. Sanger advised only

hospitals be constructed and that they spend none of their money on a four year medical school. The fact that two states employed Dr. Sanger as a consultant should establish him as somewhat of an expert. That his is not a one-track mind and that he does not consider a medical school to be a cure-all is established by his recommendations that Mississippi have no four year medical school and that North Carolina have one. Conditions in Mississippi are different from those in North Carolina, so different recommendations were made—a four year medical school for North Carolina—none for Mississippi.

Then the opponent brings forth some argument involving numbers of hospital beds—millions of dollars from federal, state and local sources. These figures are pertinent and relevant but too complicated to be presented here. They were presented to the Advisory Budget Commission. That they did not convince this body is evidenced by the fact that the Advisory Budget Commission in their report and that Governor Cherry in his message to the General Assembly recommended the establishment of a four year medical school at Chapel Hill.

In the final paragraph the opponent expresses what seems to be a preconceived opinion, "The medical school supplies no essential need for this State." In telling why he is opposed to a medical school owned and operated by the State, he does not deny that we need more doctors in the State. He does not promise that the two endowed schools will train the doctors we need. He does not inform the young men and women of North Carolina who wish to study medicine that they will be given preference when they apply to the endowed schools for admission as students.

No one doubts that it will take money and lots of money to operate a four year medical school. No one claims that every need of every state institution can be satisfied and still leave enough money in the state treasury to set up our Medical Care Program. No one thinks that all teachers and state employees can be paid as high salaries as they wish. There is only so much money available. We have many problems and many needs. If we had unlimited funds, we could not solve all of our problems in one sweep. If we are to make the best use of what we have, whether that be money, farms, factories or human lives, we must plan as best we can.

The Medical Care Commission has presented a program which in their opinion and in the opinion of a great many people of the State goes a long way in the right direction toward the needs of the State. It seems to be carefully related and integrated to other problems. All parts of the program are interdependent. For instance, if we are to build hospitals throughout the state, we will need doctors, nurses, laboratory workers and state trained personnel to staff them. If we do not have properly trained people in these buildings, they are not hospitals but merely piles of brick which will serve no useful purpose.

Some one claims that the low per capita income in North Carolina makes it inadvisable for the state to spend large sums of money for medical care. The same person would have us solve our economic problems first then he says everyone would have enough money to buy good health. If we could solve our economic problem over-night, that would be wonderful indeed. But most thoughtful people realize that a considerable part of our economic problem is caused by ill health. When a person becomes sick, money is spent to regain a semblance of health. If the person happens to be a bread-winner, his earning capacity may be stopped for the duration of his illness. In North Carolina as in other states we lose income and capital because of sickness. In other words, we pay for health whether we have it or not. The saying—"Save at the spigot and waste at the bung," has its application to our Medical Care Program. If we are to

improve our economic condition, we must stop wasting our human resources. If you have ever been or ever seen a small boy carrying water in a bucket from a well to a water barrel on the back porch, you can understand his concern over the leaks in the barrel and his efforts to stop those leaks. Those of us who are engaged in improving the health of our people are anxious to stop the waste of human life and human well-being.

One well meaning man has stated that if we build hospitals in rural communities that doctors and nurses will rush to them like flies after molasses. They cannot rush in from other parts of North Carolina—for no community in the State has more doctors than are needed where they are. We cannot expect them to come from other states unless we give them a substantial money subsidy because they would have no particular interest in us except for the money they could get out of us. There may be some who might be employed for a price but those communities which have offered a cash subsidy have not been deluged with applicants. In fact some who have offered as much as $2,000 per year as a subsidy have found no takers. It is generally admitted that we need at least 1000 additional doctors. If we could get them at the rate of $2,000 each, the annual outlay would be $2,000,000 which is considerably more than the estimated cost of operating a four year medical school.

Sizeable majorities of all groups who have studied our problem, whether from a purely economic point of view or from the humanitarian standpoint have agreed that if we are ever to have as many doctors as we need, we must train North Carolina's young people in a medical school owned and operated by the people of North Carolina.

We have tried to bring out the idea that to train personnel; that is, doctors, nurses, laboratory workers and other technically qualified people, we need a new training school.

The program has wide-spread popular approval—in fact one of its chief hazards is over-confidence. Many people who favor it feel that the entire medical program will be approved in the General Assembly by a large majority and that they need do nothing to make assurance doubly sure. There are opponents to the program. These opponents may not be numerous but they are clever and are experienced in the art of making themselves seem to be numerous. They are articulate. They know how to talk, when to talk and to whom. They also know the right words to use. They know the usefulness of tactics. They subscribe to the idea of divide and conquer. If the supporters of the Medical Care Program will remain on the alert and will lift up their voices where they will be heard, they can do much to make this Medical Care Program a reality. It is the North Carolina General Assembly which makes the final decision. We have a capable legislative body who will endeavor to carry out the will of the people. If all those who favor the program will speak to their representative and senator, their voice should be louder than that of those who master the art of seeming to be numerous. During the war whenever we wished to impress the people of the urgency for action, we would call upon our musicians for a tune. One of the favorites was "The Time is Now." For the Medical Care Program it is all too apparent that now is the time for the decision.

Notes and Comment

DR. J. N. JOHNSON—It is with sadness that we note the death of Dr. J. N. Johnson. Dr. Johnson was one of the pioneers in the development of our public health program. In the early days he lifted up his voice for what we now call Oral Hygiene work. In 1931 he became a member of the State Board of Health and served faithfully and conscientiously for more than fifteen years. Although he had a serious disease of the heart which made him realize fully the nearness of death, he attended many board meetings which were devoted to problems not directly related to his profession but which his high and broad sense of duty made him feel that he should attend to expedite the work of the board.

The other members of the State Board of Health appreciated his services so highly that they presented Dr. Johnson with a Scroll in recognition of his faithful service. The front cover of the October, 1946 Health Bulletin reproduced a photograph made at the time the Scroll was given to him.

All persons who are interested in public health should be grateful to him. All who knew Dr. J. N. Johnson will have an enduring affection for him.

* * *

MISS BLANCHE HENDERSON—Death has claimed one of the veteran workers of the State Board of Health. During some twenty years as bookkeeper in the Bureau of Vital Statistics, Miss Henderson probably rendered service to more people than any other person in the State. It was her duty to handle every birth and every death certificate that was filed with the Bureau of Vital Statistics and to certify the number sent in by each local register. During a twenty year period it is probable that every family in the State has received some service from Miss Henderson. She was so modest that many who worked in the same building with her did not know her or what she did. There can be little doubt that she received the commendation—"Well Done Thou Good and Faithful Servant."

* * *

FIREWORKS—The following news story really needs no interpretation or comment. It tells its own story. To those who are interested in public health the remedy should be apparent.

751 INJURED BY FIREWORKS DURING YEAR-END HOLIDAYS

Durham, Jan. 22.—Fireworks caused serious injury to 751 persons in North Carolina during the 30-day period from Dec. 10 to Jan. 10 this year, according to a survey by the Hospital Care Association, Inc., of Durham.

The association revealed today that reports from 261 physicians were received and the 751 patients requiring medical treatment received their injuries directly or indirectly from firecrackers, Roman candles or other fireworks during the past Christmas-New Year's season.

Loss of eyesight, hands and fingers were reported for almost a hundred fireworks victims. Ruptured ear drums and severe skin burns made up a large portion of the other casualties.

The Hospital Care Association, a nonprofit Blue Cross organization, reported that undoubtedly there were many additional cases of fireworks injuries which were not serious enough to require the attention of a physician.

Physicians' Comment

Comments of physicians answering the survey poll included such statements as the following:

Apex—"One boy with part of finger blown off and ear drum damaged."

Fayetteville—"Amputation of three fingers. Severe lacerations of entire hand." "Loss of eye." "Mangled hand."

Forest City—Hand blown off."

Greensboro—"Explosion of TNT bomb

purchased from a Wilmington concern —mutilated hand."

Greenville—"Right eye ball burst."

Henderson—"He lost one eye."

Kinston—"Mangling and burning of left hand."

Murfreesboro—"Loss of three fingers and portion of hand."

Raleigh—"Loss of right hand, partial loss of left hand, loss of vision, severe face wound."

Sanford—"Loss of eye."

Wilmington—"Lost one eye."

Legislative Measures

Executive Vice President E. M. Herndon of the association said results of the survey would be turned over to State medical and hospital officials and members of the Legislature, which is currently considering measures for outlawing the manufacture, sale and use of fireworks throughout the State. Statements by a large number of physicians expressed a desire to see a State-wide ban enacted.

Of the 751 patients reported treated by physicians, 74 were admitted to hospitals. A total of 121 patients were reported as "seriously injured."

Among the seriously injured were 37 classified as "eye injuries" including nine cases involving the loss of an eye, six cases resulting in the loss of vision of one eye, two cases resulting in questionable vision of one eye, two cases with corneal scar of one eye and four cases of burns of the eye.

Among 50 reported arm injuries were two cases of the loss of a hand, seven cases of partial loss of hand, six cases of loss of one finger, seven cases of loss of two fingers, five cases of loss of three fingers and one case of five fingers lost.

Other serious injuries and the number reported were: Severe skin burns, eight; ruptured ear drums, four; chest injuries, one; face injuries, three; leg injuries, two; fractured foot, one; and abdomen injury, one.

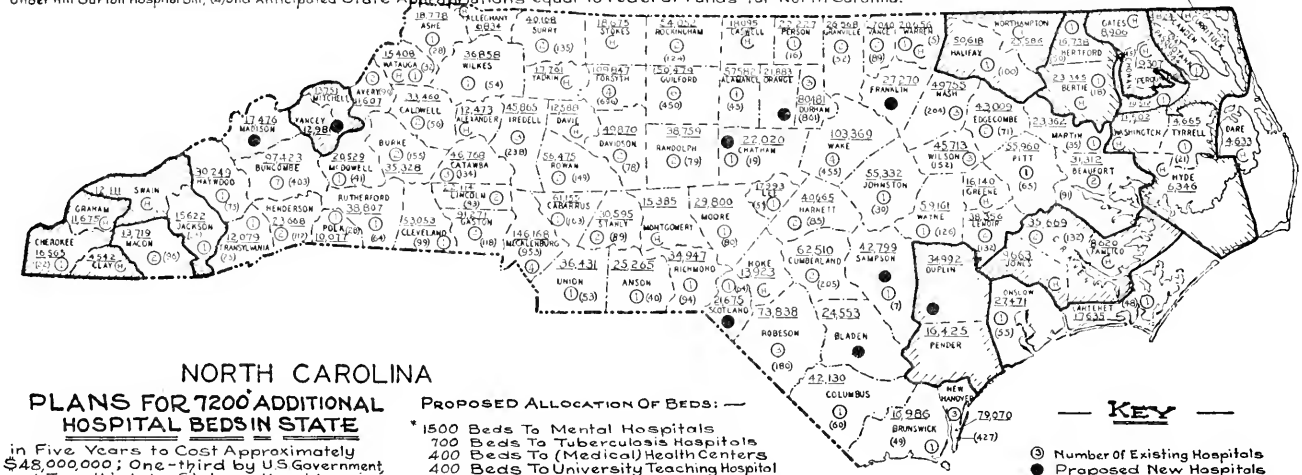
PAGE HORTON, age eight months, weight 19 pounds, daughter of Mr. and Mrs. Otis R. Horton, Raleigh, N. C. Mrs. Horton was formerly a secretary in the Division of Nutrition of the North Carolina State Board of Health.

Margaret Ann, age four; Tommie, age two and one-half; Helen, age ten months; children of Mr. and Mrs. Guy T. Perry, Piney Creek, North Carolina. The advice of a sanitarian, a public health nurse and The Health Bulletin are given credit for helping in the home and on the dairy farm operated by Mr. Perry.

FIVE YEAR PLAN 1947-1951
OF
NORTH CAROLINA MEDICAL CARE COMMISSION

FOR BUILDING (1) NEW GENERAL HOSPITALS; (2) HEALTH (MEDICAL) CENTERS; AND ENLARGEMENT OF EXISTING HOSPITAL FACILITIES IN NORTH CAROLINA

The Plans are Tentative and are Subject to:— (1) Revision, (2) Approval of U.S Public Health Service, (3) Appropriations by Congress Anticipated under Hill Burton Hospital Bill, (4) and Anticipated State Appropriations equal to Federal Funds for North Carolina.



NORTH CAROLINA
PLANS FOR 7200 ADDITIONAL HOSPITAL BEDS IN STATE

in Five Years to Cost Approximately $48,000,000; One-third by U.S Government and Two-thirds by State and Local Agencies.

* The State expects to acquire U.S Camp Butner at Durham and use its 3374 hospital beds for mental patients, thereby increasing new mental beds to 4874 and the total new beds for all hospitals to 10,574.

PROPOSED ALLOCATION OF BEDS:—

* 1500 Beds To Mental Hospitals
700 Beds To Tuberculosis Hospitals
400 Beds To (Medical) Health Centers
400 Beds To University Teaching Hospital
4200 Beds To be Distributed on basis of Need to New Hospitals and for Enlargement of Existing Hospitals.

KEY

③ Number Of Existing Hospitals
● Proposed New Hospitals
(H) Proposed Health Centers
(121) Number Of Beds 1945
50,615 Population 1943
Proposed Hospital Districts

The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD of HEALTH

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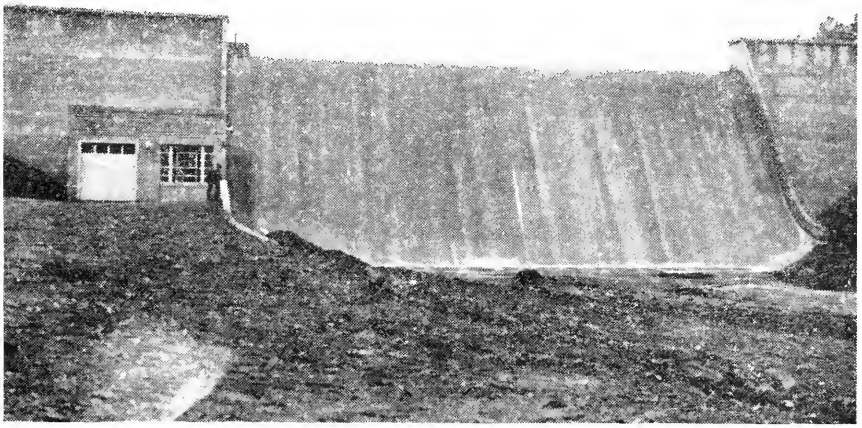

New Dam and Raw Water Reservoir
Completed During 1946
City of Asheboro, North Carolina
Piatt & Davis, Engineers

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
Appendicitis
Cancer
Constipation
Chickenpox
Diabetes
Diphtheria
Don't Spit Placards
Endemic Typhus
Flies
Fly Placards
German Measles
Health Education
Hookworm Disease
Infantile Paralysis
Influenza
Malaria
Measles
Pediculosis
Pellagra
Residential Sewage Disposal Plants
Sanitary Privies
Scabies
Scarlet Fever
Teeth
Tuberculosis
Typhoid Fever
Venereal Diseases
Vitamins
Typhoid Placards
Water Supplies
Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, North Carolina.

Prenatal Care.
Prenatal Letters (series of nine monthly letters.)
The Expectant Mother.
Infant Care.
The Prevention of Infantile Diarrhea.
Breast Feeding.
Table of Heights and Weights.
Baby's Daily Schedule.
First Four Months.
Five and Six Months.
Seven and Eight Months.
Nine Months to One Year.
One to Two Years.
Two to Six Years.
Instruction for North Carolina Midwives.

CONTENTS

THE Health Bulletin
PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH
Vol. 62 FEBRUARY, 1947 No. 2
CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Public Water Supplies in North Carolina, 1921 - 1946

By
J. M. JARRETT, DIRECTOR
and
E. C. HUBBARD, PRIN. SAN. ENGR.
Division of Sanitary Engineering

It is appropriate at this time—when so much emphasis is being placed on the various phases of public health, including medical care—to give some thought to those health safeguards which we have come to accept as "matter-of-fact." One of these much overlooked factors is public water supplies and their protection.

Too often, too many of us give too little thought to what constitutes a safe public water supply. If we get a free flow of clear water when we open a spigot at any hour of the day or night, we are satisfied. Our interest is aroused, however, when this fails to occur. Back of this job of providing an adequate and safe supply of water to cities, towns, and industries is an enormous outlay of public and private funds and scientific and engineering service. We should like to discuss here very briefly the development of the State laws, the activities of the State Board of Health regarding public water supplies, and the extent and adequacy of the various public supplies, with the hope that this discussion will not only be of interest but will help to focus your attention on the work of those interested in providing for you a safe public water supply.

There have been state laws regulating the sanitary protection of watersheds of public water supplies since 1899, and since 1905 there has been a State statute requiring the monthly submission of water samples from public water supplies to the State Laboratory of Hygiene. State Board of Health approval of plans for public water supply systems has been a statutory requirement since 1911.

From 1911 to 1918, there was an engineer attached to the department who, together with the engineer member of the Board, reviewed and approved plans. During this period, field inspections and investigations were not commonly made, and during a portion of the years 1918 and 1919 there was no engineer employer. The statute creating the Bureau of Sanitary Engineering and Inspection was enacted by the Legislature in 1919. The bureau was established, however, primarily for the purpose of providing machinery for enforcing the State privy law enacted at that time, and it was not until 1921 that the bureau was placed on a general appropriation basis, permitting the development of activities along the

usual lines of sanitary engineering practice in the field of water supply as commonly carried out by State Boards of Health. In view of this, very little accomplishment toward the control and supervision of public water supplies, as we know these functions today, had been made prior to 1921; hence, the past quarter century has been the period during which the important problem of public water supplies has received proper recognition.

During the past quarter century, 204 public water supplies have been added to the list of 132 which we had in 1921. Not only new supplies were developed, but many of the older supplies were enlarged and improved. As our State developed, the demand from cities and towns and new industries increased. This municipal growth and industrial expansion also created problems of sewage and waste disposal, and consequently the need for better protection of public water supplies taken from surface streams. Therefore, beginning about 25 years ago, North Carolina municipalities entered upon one of the most progressive periods of development and construction. Many water purification plants were constructed throughout the State to better treat the water being supplied the citizens.

The construction of a plant or development of a new supply did not answer the need completely. These plants needed well trained technical men to operate them, and in this respect North Carolina also came forward with a program of developing and employing men trained and capable of insuring safe water supplies.

The State Board of Health has during this period been a great motivating influence in the expansion and improvement of our public water supplies; but credit must also be given to the progressive minded public officials who provided ways and means of carrying out this program. North Carolina was also fortunate in that we had in the State a number of consulting engineers interested in public water supplies, and to these men must go the credit for building in the State a number of plants, large and small, which were modern in every respect and designed according to the best engineering practice.

Many of these plants now need to be enlarged and rebuilt, because of the growth of the towns in which they are located. The impact of the war was also felt in the water plants and equipment was worn out which could not be repaired or replaced during the war. Thus, we are entering now another period of water supply development in the State. New problems will have to be faced in supplying you with an adequate and safe public water supply; but we can with confidence look to our city officials and consulting engineers to provide us with the best that can be had.

A great number of towns are already making plans for future development. Through assistance of the Federal Works Agency, post war projects totalling more than $9,000,000.00 are being developed. Your interest and support should be given your local officials who are trying to provide a safer and more adequate supply of water for you.

The cover photograph shows one of the latest water supply developments in the State—a new impounded raw water supply and dam for the town of Asheboro. This improvement will provide Asheboro with adequate water to meet its fast growing needs, brought about by the expansion of the town and its industries. Piatt and Davis of Durham were the engineers who designed and developed this supply.

On the following pages are tables listing all public water supplies of the State, with information regarding the type of treatment, source of supply, and other pertinent data. There are also two maps showing the location of public water supplies as of 1921 and 1946. From these tables and maps, it may be seen that in 1921 there were 132 public water supplies in North Carolina serving 592,582 persons, which represented 23.2% of the total state

population; whereas, in 1946, there are 336 public supplies serving 1,272,436 persons representing 32.8% of the total state population. This represents considerable progress; however, there is still much to be accomplished toward providing a safe public water supply for the urban population in North Carolina.

Announcing State and Federal Fellowships in Health Education For 1947

Fellowships for a year's graduate study in health education, leading to a Master's Degree in Public Health, are being offered for the academic year 1947-1948 to qualified persons through the U. S. Public Health Service and others through the N. C. State Health Department.

Men and women, between the ages of 22 and 40, who have a Bachelor's Degree from a recognized college or university and who meet the particular entrance requirements of the school of public health of their choice, are eligible for the fellowships. There are eight recognized schools of public health in the country, and the candidate may attend the school of his choice.

The fellowships include all tuition expenses, plus a monthly stipend of $100. Any war veterans who qualify for training may elect to receive their financial assistance under the G.I. Bill of Rights or from fellowship funds.

Application forms for both the Federal and State fellowships may be obtained by writing the Director, Division of Local Health Administration, N. C. State Board of Health, Raleigh. Applications must be on file by March 15, 1947.

Dental Defects – Commonest of All Ailments

At the present time almost everyone recognizes the close relationship between dental health and physical well-being. Persons with unclean mouths, and broken down or badly infected teeth can scarcely expect to maintain healthy well-nourished bodies free from systemic infections.

Experience has shown that most people, including young children, are victims of dental decay. Since this decay starts soon after teeth appear in the mouth, it is important to begin dental care early in life. The only known way to find and correct dental defects as they occur is by means of routine visits to a dentist.

Parents have a definite responsibility in establishing the dental examination habit in children. Most parents realize the importance of giving their children a good start in life by providing adequate dental care, but there still remain too many children who never receive dental care. It is difficult to predict what effect this lack of care will have on the health of such children as they grow to adults, but it is fairly safe to assume that early regular dental attention could help reduce the number of chronic diseases of the heart, eyes, kidneys or joints.

Dental defects are not only a decided health hazard, but dental disease which goes untreated in childhood leads to more extensive dental damage in later life. This damage is permanent, because, unlike other body tissues, the teeth cannot repair themselves once decay sets in.

PUBLIC WATER SUPPLIES IN NORTH CAROLINA

January 1, 1947

MUNICIPALITY	Ownership	Population 1940	Date Installed	Rated Capacity M.G.D.	SOURCE	TREATMENT PROCESSES																STORAGE 1000 Gals.		
						Aeration	Pre-Chlorine	Coagulation	Sedimentation	Filtration	Sec. Alkali	Ammonia	Post-Chlorine	Act. Carbon	Calgon	Hypochlorite	Iron Removal	Manganese Removal	Softening		Lab. Control: Chem.	Lab. Control: Bact.	Ground Surface	Elevated	Total
Aberdeen	M	1,026	1920		Springs	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	112	75	187
Ahoskie	M	2,313	1919	0.43	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	100	60	160
Atlantic Beach	P P	S-1,000 W- 20			Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	20	20
Albemarle	M	4,060	1912	4.0	Long Creek	-	x	x	x	x	x	-	x	x	-	-	-	-	-		x	x	350	600	850
Alexander Mills	P	819	1918		17 Shallow Wells	-	-	-	-	-	x	-	-	-	-	x	-	-	-		-	-	0.0	100	100
Andrews	M	1,520	1910	0.175	Beaver Creek	-	-	-	-	x	-	-	x	-	-	-	-	-	-		-	-	0.0	110	110
Angier	M	1,028	1936	0.1	2 Deep Wells	-	-	-	-	-	-	-	-	-	x	-	-	-	-		-	-	0.0	100	100
Apex	M	977	1924	1.0	Streams (imp)	-	x	x	x	x	x	-	x	-	-	-	-	-	-		x	-	15	150	165
Asheboro	M	6,981	1939	2.0	Back Creek (imp)	-	-	x	x	x	x	-	x	x	-	-	-	-	-		x	x	1,000	500	1,500
Asheville	M	51,310	1890	11.5	Bee Tree & N. Fork Creeks (imp)	-	-	-	-	-	-	x	x	-	-	-	-	-	-		x	x	0.0	16,500	16,500
Aulander	M	1,057	1925		Shallow Wells	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	300	75	375
Ayden	M	1,884	1915		Shallow Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	60	60
Avondale	P	500	1941	0.25	Surface Supply	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	-		75	75
Badin	P	2,500	1915	2.0	Yadkin River (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	1,000	250	1,250
Bailey	M	645	1942	0.08	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Bakersville	P	473	1925		Springs (45)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	10	10
Banner Elk	P	344	1933	0.216	Deep Wells (2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Bat Cave	P	80	1928	0.0012	1 Spring	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	3	3
Battleboro	M	270	1944	0.046	1 Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Barnardsville	M	500	1916		2 Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-			
Beaufort	P	3,272	1910		Deep Well	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	100	100
Belhaven	M	2,360	1923	0.086	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75

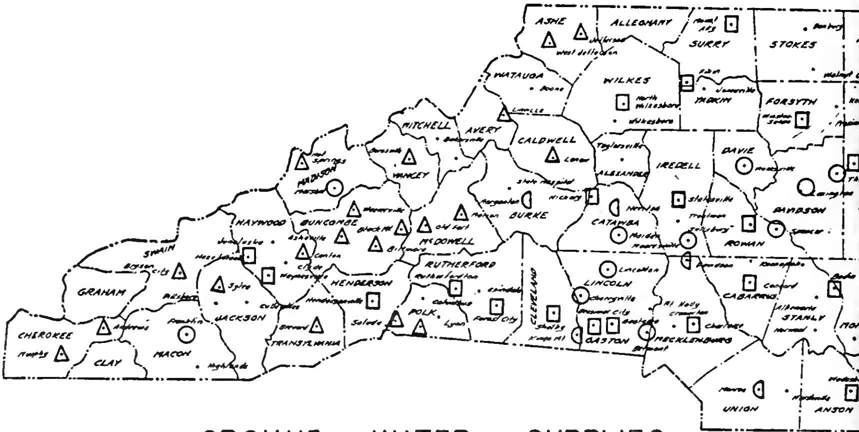
Belmont	M	4,356		1.0	Catawba River	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	500	500	1,000
Benson	M	1,837		0.432	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	100	75	175
Bessemer City	M	3,567		0.5	Stream (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	150	200	350
Bethel	M	1,333	1928	0.085	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	200	100	300
Biltmore Estate	P	300			Stream (imp)	-	-	-	-	x_p	-	-	x	-	-	-	-	-	-		-	-	0.0		
Biscoe	M	843	1936		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Black Mountain	M	1,042	1912	0.54	Rocky Branch (imp)	-	-	-	-	-	-	-	x	-	x	-	-	-	-		-	-	0.0	2,725	2,725
Bladenboro	M	724	1936		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	40	40
Blowing Rock	M	654	1924	0.50	Middle Fork Creek	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	-	40	610	750
Boiling Springs	M	613	1942		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Boone	M	1,788	1924		Deep Well & Winkler Creek (imp)	-	-	-	-	-	-	x	x	-	-	-	-	-	-		-	-	0.0	200	200
Boonville	M	405	1941	0.093	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Brevard	M	3,061	1905	1.0	King Creek (imp)	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	363	363
Brookford	P	910			Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0		
Brunswick	P	227	1925		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	1	1
Bryson City	M	1,612	1910	0.70	Hughes Br. & Land's Cr.	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	250	250
Burgaw	M	1,476	1936		Deep Wells	x	-	x	x	x_p	-	-	x	-	-	-	x	-	-		-	-	0.0	100	100
Burlington	M	12,198	1905	3.5	Stony Creek (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	465	1,650	2,115
Burnsville	M	997	1928	0.5	Bowlin's Creek	-	-	-	x	x	-	-	x	-	-	-	-	-	-		-	-	0.0	250	250
Candor	M	509	1936	0.09	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	25	25
Canton (1)	M	5,037	1936	2.0	Pigeon River	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	0.0	525	525
Canton (2)	M			0.7	Rough Creek	-	-	-	-	x_p	-	x	x	-	x	-	-	-	-		x	x	0.0	750	750
Carolina Beach	M M	S-5,000 W-637	1934 1934	0.35 0.35	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Camp Davis	G	2,100	1941	3.00	Wells	-	-	-	-	x_z	-	x	-	-	-	-	x	-	x		x	x	0.0	100	100
Carthage	M	1,381	1912	0.25	Springs	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	550	272	822
Cary	M	1,141	1925		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Catawba	M	402	1936	0.104	Deep Wells (3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Chadbourn	M	1,576	1923		Deep Wells (2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Chapel Hill	M	3,654	1900	1.5	Streams (imp)	x	x	x	x	x	x	x	x	x	-	-	-	-	-		x	x	250	300	550

MUNICIPALITY	Ownership	Population 1940	Date Installed	Rated Capacity M.G.D.	SOURCE	TREATMENT PROCESSES																	STORAGE 1000 Gals.		
						Aeration	Pre-Chlorine	Coagulation	Sedimentation	Filtration	Sec. Alkali	Ammonia	Post-Chlorine	Act. Carbon	Calgon	Hypochlorite	Iron Removal	Manganese Removal	Softening		Lab. Control: Chem.	Lab. Control: Bact.	Ground Surface	Elevated	Total
Charlotte	M	100,899	1929	16.0	Catawba River (imp)	-	x	x	x	x	x	-	x	x	-	-	-	-	-		x	x	6,000	3,000	9,000
Cherokee Indian Reserv.	G	800			Surface Stream	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0 0	50	50
Cherryville	M	3,225	1913	0.39	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	100	380	480
Chimney Rack	P	200		0.050	Springs	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	0.0	5	5
Chimney Rack Corp.	P	150		0.075	Spring	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	17	3.5	20.5
China Grove	M	1,567	1925	0.086	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Claremont	M	467	1938		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Clayton	M	1,711	1912	0.25	Deep Wells	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	100	100	200
Cleveland	M	506	1941		Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Clinton	M	3,557	1911	1.44	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	200	75	275
Cliffside	P	2,500	1926	1.0	2nd Broad River	-	-	x	x	x	x	x	x	x	-	-	-	-	-		x	x	600	75	675
Clyde	M	516	1925	0.144	Conners Creek	-	-	x	x	x	-	-	x	-	-	-	-	-	-		-	-	12	50	62
Coats	P	827			Spring	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	18	10	28
Colerain	M	307	1939	0.077	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	30	30
Columbus	M	390	1924	0.060	Horse Creek	-	-	-	-	x_a	-	-	x	-	-	-	-	-	-		-	-	0.0	70	70
Concord	P	15,572	1891	4.0	Cold Creek (imp)	-	-	x	x	x	x	x	x	x	-	-	-	-	-		x	x	1,500	1,500	3,000
Conover	M	1,195	1927	0.165	Deep Wells (2)	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	0.0	75	75
Cooleemee	P	1,842	1931	1.44	S. Fork of Yadkin River	-	-	x	x	x	x	x	x	x	-	-	-	-	x_z		x	x	445	200	645
Cranberry	P	350			Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	?	Yes	Yes
Cramerton Mills	P	2,000		1.0	Surface Supply	-	-	x	x	x	-	-	x	x	-	-	-	-	-		x	x	333	75	408
Creedmoor	M	640	1940	0.140	Big Ledge Creek	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	52	68	120
Crossnore	P	266	1928	0.11	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		Yes	Yes
Cullowhee	P	600	1922	0.19	Long Br. & Flat Br.	-	-	-	-	x_p	-	-	-	-	-	x	-	-	-		-	-	0.0	175	175
Danbury	P	300	1922		Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-			

Davidson	M	1,550	1924	0.50	Cathey Cr. (imp)	-	-	x	x	x	-	-	x	-	-	-	-	-	-		x	x	200	122	322
Dentan	M	677	1940		2 Deep Wells	-	-	-	-	x[z]	-	-	x	-	-	-	-	-	x		-	-	0.0	75	75
Dillsboro	M	290	1922		Well & Dills Branch	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	50	50
Drexel	M	881	1939	0.144	Probst Creek	-	-	x	x	x	-	-	x	-	-	-	-	-	-		x	-	50	65	110
Dunn	M	5,256	1910	2.0	Cape Fear River	-	-	x	x	x	x		x	-	-	-	-	-	-		x	x	1,000	700	1,700
Durham	M	60,195	1880	8.0	Flat River (imp)	-	x	x	x	x	x		x	x	-	-	-	x	-		x	x	2,400	1,500	3,900
Pisgah Forest Ecusta Paper Corp.	P	775		25.0	Davidson River	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	4,200	250	4,450
Edenton	M	3,835	1910		Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		100	100
Elizabeth City	M	11,564	1926	2.0	Shallow Wells	-	x	x	x	x	-	x	x	-	-	-	x	x	x		x	x	1,000	500	1,500
Elizabethtown	M	1,123	1935		Deep Wells	x	x		x	x[p]	-	-	-	-	-	-	x	-	-		-	-	50	100	150
Elkin	M	2,734	1914	0.45	Big Elkin Creek (imp)	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	500	100	600
Elk Park	M	467	1926	0.06	Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Ellerbee	M	693	1924		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Elm City	M	946	1914	0.2	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	125	125
Elon College	M	494	1924	0.04	Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Enfield	M	2,208	1923	0.22	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	150	100	250
Fairmont	M	1,993	1924	0.8	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Fair Bluff	M	970	1940		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Faison	M	751	1935	0.144	Deep Wells (2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Farmville	M	2,980	1914	1.28	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	100	300	400
Fayetteville (1)	M	17,428	1943	3.00	Bonnie Doonelake Kornbou & Glenville Lks	-	-	x	x	x	x	x	x	x	-	-	-	-	-		x	x	1,000	1,600	2,600
Fayetteville (2)	M	"	1911	3.00		-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-			
Forest City	M	5,035	1922	0.5	Brackett Creek (imp)	-	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	300	75	375
Fort Bragg	G	30,000	1941	7.0	Little River	-	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	2,500	2,100	4,600
Fountain	M	483	1936	0.13	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Franklin	M	1,249	1910		Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	200	200
Franklinton	M	1,273	1921	0.5	Kearney's Creek (imp)	-	x	x	x	x	x		x	-	-	-	-	-	-		x	-	240	100	340
Fremont	M	1,264	1923		Deep Wells	-	-	-	-	-	-	x	-	-	-	-	-	-	-		-	-			
Fuquay Springs	M	1,323	1937	0.288	Deep Wells	x	x	x	x	x[p]	-	-	x	-	-	-	x	-	x		x	-	0.0	100	100

THE PUBLIC WATER SUPP

DECEMB



GROUND WATER SUPPLIES

SHALLOW GROUND WATER

TOWN	POP	TOWN	POP	TOWN	POP	TOWN	POP	TOWN	POP.
Aberdeen *	858	Carthage *	962	Kings Mt	2800	Newton	3021	Scotland Neck	2061
Ayden	1673	Davidson	1156	Linville	255	Pinebluff	166	West Jefferson	462
Ahoskie	1428	Hertford *	1704	Morganton	2867	Roxboro	1651		
		Jefferson	196	Monroe *	4084	Rowland	767		

DEEP SEATED GROUND WATER

Beaufort	2638	Elm City	725	Lillington	393	New Bern *	12198	Thomasville *	5676
Belhaven	1816	Fairmont	1000	Lincolnton	3390	Oxford *	3606	Warrenton	927
Belmont	2341	Farmville	1780	Maiden	1266	Plymouth	1847	Warsaw	1108
Benson	1123	Franklin	1058	Maxton	1597	Raeford	1835	Wendell	1239
Chadbourne	1121	Franklinton	773	Marshall	746	Red Springs	1018	Williamston	1800
Cherryville	1884	Graham	2366	Mebane	1351	St Pauls	1147	Windsor	1210
Clayton	1423	Jacksonville	636	Mocksville	1146	Selma	1681	Wrightsville Beach	20
Clinton	2110	Kinston	9771	Morehead City	2958	Snow Hill	790		
Dunn	2805	La Grange	1399	Mooresville	4315	Spencer	2510		
Edenton	2777	Laurinburg	2643	Mt Olive	2237	South Port	1664	* CHLORINATED..	
		Lexington *	5254	Nashville	999	Spring Hope	1221		

SURFACE WATER SUPPLIES

UNFILTERED STERILIZED LIQUID CHLORINE

TOWN	POP	TOWN	POP	TOWN	POP	TOWN	POP	TOWN	POP
Andrews	1634								

FILTERED STERILIZED LIQUID CHLORINE

								Rockingham	2509
								Statesville	7895
Burlington	5952	Durham	21,719	Goldsboro	11296	Hendersonville	3720	Smithfield	1895
Canton	2584	Elizabeth City	8,925	Greensboro	19861	Hickory	3076	Wadesboro	2648
Chapel Hill	1483	Elkin	1195	Greenville	5772	High Point	14302	Washington	6314
Charlotte	46,338	Fayetteville	8877	Hamlet	3802	Pine Hurst	35	Wilmington	33372
Concord	9903	Gastonia	12871	Henderson	5222	Proximity	10 000	Wilson	10612
						Rocky Mt	12 742	Winston-Salem	48395

FILTERED STERILIZED HYPOCHLORITE

Albemarle	2691	Bodin	3040	Louisburg	1954	Raleigh	24418	Shelby	3609
Asheboro	2659	Bessemer City	2176	Mt Airy	4752	Salisbury	13884		

FILTERED NOT STERILIZED

Forest City	2312	North Wilkesboro	2363	Sanford	2977	Wake Forest	1423		
Hazelwood	484	Rutherfordton	1693	Southern Pines	743	Waynesville	1942		
Lumberton	2691	Reidsville	5333	Tarboro	4568	Zebulon	355		

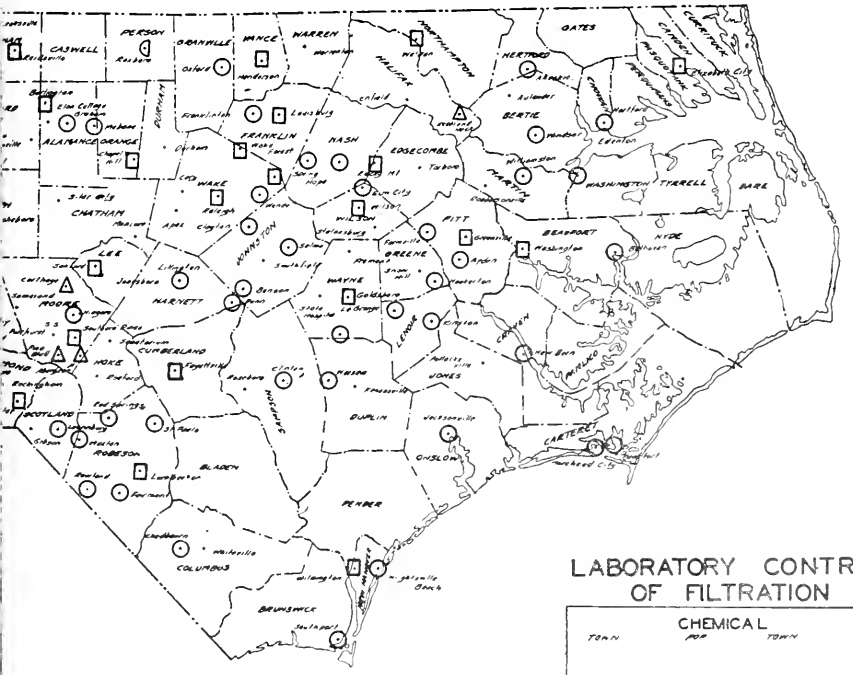
UNFILTERED NOT STERILIZED

Asheville	28504	Bryson City	882	Marion	1784	Old Fort	331	Weaverville	606
Biltmore	172	Burnsville	215	Mars Hill	364	Saluda	349		
Black Mt	331	Hot Springs	435	Murphy	1314	Sylva	863		
Brevard	1658	Lenoir	3718	Niagara	26	Tryon	1067		

BUREAU OF SANITARY EN

NORTH CAROLINA ST

IES OF NORTH CAROLINA
1921



LEGEND

- Shallow Ground Supply
- Deep Sealed Ground Supply
- Surface Supply: Gravity Filter
- Surface Supply: Pressure Filter
- Surface Supply: Slow Sand Filter
- Surface Supply: Unfiltered
- "C" Sterilized: Liquid Chlorine
- "H" Sterilized: Hypochlorite
- Chemical Control of Filtration
- Bacteriological Control of Filtration

RECAPITULATION

TYPE OF SUPPLY	NUMBER SUPPLIES	PER CENT TOTAL NUMBER SUPPLIES	POPULATION SERVED	PERCENTAGE TOTAL STATE POPULATION SERVED	PERCENTAGE CONSUMERS PUBLIC WATER SUPPLY SERVED
Shallow Ground Water	17	12.7	24111	1.0	4.4
Deep Sealed Ground Water	47	35.7	109,230	4.3	18.5
Unfiltered Surface Water	13	9.7	45313	1.8	7.7
Filtered Surface Water	50	37.3	411,968	16.1	69.4
Totals	136	100.0	592,582	23.2	100.0
Unfiltered, not chlorinated	17	12.7	43679	1.7	7.4
Shallow Ground, chlorinated	4	3.1	7608	0.3	1.3
Deep Sealed Ground, chlorinated	4	3.1	16794	1.6	3.6
Unfiltered Surface, chlorinated	1	0.7	1634	0.06	0.3
Filtered Surface, chlorinated	29	21.3	325,341	12.7	55.0
Filtered Surface, Hypochlorite	9	6.6	57,083	2.5	10.6
Filtered Surface, not sterilized	12	9.1	27,484	1.1	4.6
Chemical Control, Filtration	none		none		
Chemical and Bacteriological Control	1	0.7	33,372	1.3	5.7

LABORATORY CONTROL OF FILTRATION

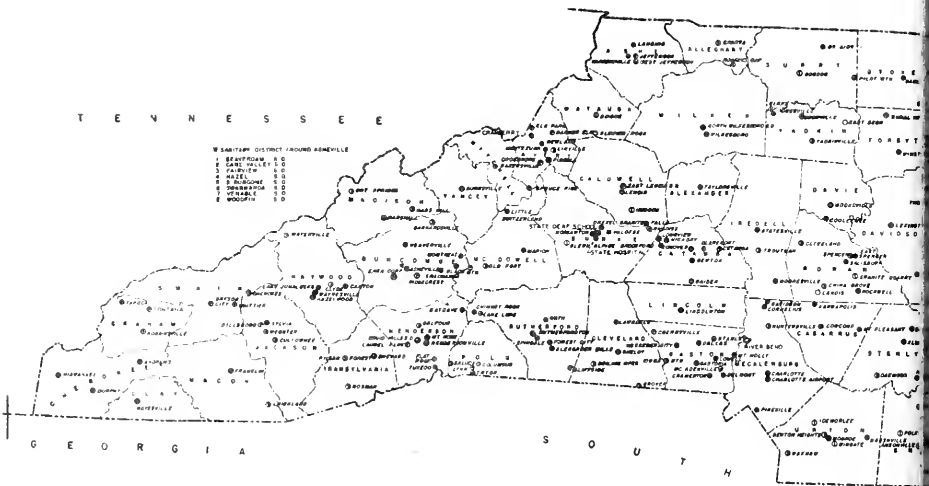
CHEMICAL

TOWN	POP.	TOWN	POP.

CHEMICAL AND BACTERIOLOGICAL

Wilmington	33372

NEERING AND INSPECTION
BOARD OF HEALTH



TOWNS WITH PUBLIC WATER SUPPLIES

NO	TOWNS	POP	
	TOWNS OVER 1000 ●		
1	ABERDEEN	1076	GW
2	AHOSKIE	2313	GW
3	ALBEMARLE	4060	FS
4	ANDREWS	1520	USS
5	ANGIER	1028	GW
6	ASHEBORO	6981	FS
7	ASHEVILLE	51310	USS
8	AULANDER	1057	GW
9	AYDEN	1084	GW
10	BADIN	3083	FS
11	BEAUFORT I	3272	GW
12	BELHAVEN	2360	GW
13	BELMONT I	4356	FS
14	BENSON	1817	[illegible]
15	BESSEMER CITY	3567	FS
16	BETHEL	1335	[illegible]
17	BLACK MOUNTAIN	1047	USS
18	BOONE	1700	USS
19	BREVARD	[illegible]	[illegible]
20	BRYSON CITY	1012	USS
21	BURGAW	1475	IR
22	BURLINGTON	12198	FS
23	CAMP DAVIS	21000	GW
24	CANTON	[illegible]	FS
25	CARRBORO I	1455	FS
26	CARTHAGE	1381	GW
27	CARY	[illegible]	[illegible]
28	CHADBOURNE	1571	[illegible]
29	CHAPEL HILL	3654	FS
30	CHARLOTTE	100899	FS
31	CHERRYVILLE	3225	[illegible]
32	CHINA GROVE	1567	[illegible]
33	CLAYTON	1711	[illegible]
34	CLIFFSIDE I	1684	[illegible]
35	CLINTON	3557	[illegible]
36	CONCORD	15572	FS
37	CONOVER	1185	[illegible]
38	COOLEEMEE I	1847	FS
39	CORNELIUS I	1155	FS
40	CRAMERTON	2000	FS
41	CULLOWHEE I	1200	FS
42	DALLAS	1704	FS
43	DAVIDSON	1550	FS
44	DUNN	[illegible]	FS
45	DURHAM	60195	FS
46	EAST FLAT ROCK 2	1113	USS
47	EAST SPENCER 2	2181	FS
48	EDENTON	3835	GW
49	ELIZABETH CITY	11564	IR
50	ELIZABETHTOWN	1116	IR
51	ELKIN	2734	FS
52	ENFIELD	2106	GW
53	FAIRMONT	1893	GW
54	FARMVILLE	2980	GW
55	FAYETTEVILLE	17428	FS
56	FOREST CITY	5038	FS
57	FORT BRAGG	68300	FS
58	FRANKLIN	[illegible]	[illegible]
59	FRANKLINTON	[illegible]	[illegible]
60	FREMONT	[illegible]	[illegible]
61	FUQUAY SPRINGS	[illegible]	[illegible]
62	GASTONIA	21313	FS
63	GIBSONVILLE	[illegible]	[illegible]
64	GOLDSBORO	17274	FS
65	GRAHAM	[illegible]	FS
66	GRANITE FALLS	[illegible]	GW
67	GREENSBORO	59310	FS
68	GREENVILLE	[illegible]	FS
69	HAMLET I	[illegible]	FS
70	HAZELWOOD 2	1508	FS

NO	TOWNS	POP	
71	HENDERSON	7647	FS
72	HENDERSONVILLE	5381	USS
73	HERTFORD	1259	GW
74	HICKORY	13487	FS
75	HIGH POINT	38495	FS
76	HILLSBORO	1311	FS
77	JONESVILLE 2	1735	FS
78	KANNAPOLIS I	12661	FS
79	KENLY	1085	GW
80	KERNERSVILLE	2103	FS
81	KINGS MOUNTAIN	6547	FS
82	KINSTON	15388	GW
83	LA GRANGE	[illegible]	[illegible]
84	LAURINBURG	[illegible]	FS
85	LAWNDALE I	1000	[illegible]
86	LEAKSVILLE	1880	[illegible]
87	LENOIR	[illegible]	FS
88	LEXINGTON	[illegible]	[illegible]
89	LINCOLNTON	[illegible]	[illegible]
90	LITTLETON	[illegible]	[illegible]
91	LONGVIEW	[illegible]	[illegible]
92	LOUISBURG	[illegible]	[illegible]
93	LOWELL I	[illegible]	FS
94	LUMBERTON	[illegible]	[illegible]
95	MADISON I	[illegible]	[illegible]
96	MAIDEN	[illegible]	[illegible]
97	MARION	[illegible]	[illegible]
98	MARSHALL	[illegible]	USS
99	MARSHVILLE	1007	GW
100	MAXTON	[illegible]	[illegible]
101	MAYODAN	[illegible]	[illegible]
102	MEBANE	[illegible]	[illegible]
103	MOCKSVILLE	[illegible]	[illegible]
104	MONROE	[illegible]	[illegible]
105	MOORESVILLE	[illegible]	[illegible]
106	MOREHEAD CITY	[illegible]	[illegible]
107	MORGANTON	[illegible]	[illegible]
108	MOUNT AIRY	[illegible]	[illegible]
109	MOUNT HOLLY	[illegible]	[illegible]
110	MOUNT OLIVE	[illegible]	[illegible]
111	MOUNT PLEASANT	[illegible]	GW
112	MURFREESBORO	1850	GW
113	MURPHY	[illegible]	[illegible]
114	NASHVILLE	[illegible]	[illegible]
115	NEW BERN	[illegible]	[illegible]
116	NEWTON	[illegible]	FS
117	NORTH WILKESBORO	[illegible]	FS
118	NORWOOD	[illegible]	[illegible]
119	OXFORD	[illegible]	[illegible]
120	PINEHURST	[illegible]	[illegible]
121	PLYMOUTH	[illegible]	[illegible]
122	RAEFORD	[illegible]	IR
123	RALEIGH	[illegible]	[illegible]
124	RAMSEUR	[illegible]	[illegible]
125	RANDLEMAN	[illegible]	[illegible]
126	RED SPRINGS	[illegible]	IR
127	REIDSVILLE	[illegible]	FS
128	ROBERSONVILLE	[illegible]	[illegible]
129	ROCKINGHAM	[illegible]	FS
130	ROCKY MOUNT	[illegible]	[illegible]
131	ROXBORO	[illegible]	[illegible]
132	RUTHERFORDTON	[illegible]	[illegible]
133	SAINT PAULS	[illegible]	IR
134	SALISBURY	[illegible]	FS
135	SANFORD	[illegible]	FS
136	SCOTLAND NECK	[illegible]	GW
137	SELMA	[illegible]	IR
138	SHELBY	[illegible]	FS
139	SILER CITY	[illegible]	FS
140	SMITHFIELD	[illegible]	FS

NO	TOWNS	POP	
141	SOUTHERN PINES	[illegible]	FS
142	SOUTHPORT	[illegible]	[illegible]
143	SPENCER 2	[illegible]	[illegible]
144	SPINDALE	[illegible]	[illegible]
145	SPRAY	[illegible]	[illegible]
146	SPRING HOPE	[illegible]	[illegible]
147	SPRUCE PINE	[illegible]	USS
148	STANLEY	[illegible]	[illegible]
149	STATESVILLE	[illegible]	FS
150	SWANNANOA	[illegible]	[illegible]
151	SYLVA	[illegible]	USS
152	TABOR	[illegible]	[illegible]
153	TAYLORSVILLE	[illegible]	[illegible]
154	TARBORO	[illegible]	[illegible]
155	THOMASVILLE	[illegible]	[illegible]
156	TROY	[illegible]	[illegible]
157	TRYON	[illegible]	[illegible]
158	VALDESE	[illegible]	[illegible]
159	WADESBORO	[illegible]	[illegible]
160	WAKE FOREST	[illegible]	[illegible]
161	WALLACE	1050	[illegible]
162	WALNUT COVE	1084	[illegible]
163	WARRENTON	1147	IR
164	WARSAW	1483	[illegible]
165	WASHINGTON	[illegible]	[illegible]
166	WAYNESVILLE	[illegible]	FS
167	WELDON	[illegible]	[illegible]
168	WENDELL	[illegible]	[illegible]
169	WHITEVILLE	[illegible]	[illegible]
170	WILKESBORO	[illegible]	USS
171	WILLIAMSTON	[illegible]	[illegible]
172	WILMINGTON	[illegible]	FS
173	WILSON	[illegible]	FS
174	[illegible]	[illegible]	[illegible]
175	WINSTON SALEM	[illegible]	FS
176	ZEBULON	1070	FS
177	[illegible]	[illegible]	FS
178	DRAPER I	1200	FS
179	PINEVILLE	[illegible]	GW
180	CHERRY POINT	[illegible]	GW
181	NEW RIVER	[illegible]	GW
182	PROXIMITY MFG.		FS
	TOWNS 800 TO 1000 ●		
1	ALEXANDRIA MILLS I	[illegible]	[illegible]
2	APEX	[illegible]	FS
3	BISCOE	[illegible]	[illegible]
4	[illegible] CITY	[illegible]	[illegible]
5	BROOKFORD	[illegible]	[illegible]
6	BURNSVILLE	[illegible]	FS
7	COATS	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]
9	ELM CITY	[illegible]	[illegible]
10	FAIR BLUFF	[illegible]	[illegible]
11	HEMP	[illegible]	FS
12	JACKSONVILLE	[illegible]	[illegible]
13	JONESBORO 2	[illegible]	[illegible]
14	LIBERTY	[illegible]	[illegible]
15	LILLINGTON	[illegible]	[illegible]
16	MOUNT GILEAD	[illegible]	[illegible]
17	PILOT MOUNTAIN	[illegible]	[illegible]
18	PITTSBORO	[illegible]	[illegible]
19	RHODISS	[illegible]	[illegible]
20	RICH SQUARE	[illegible]	[illegible]
21	ROCKWELL	[illegible]	[illegible]
22	ROSEBORO	[illegible]	[illegible]
23	ROWLAND	[illegible]	[illegible]
24	SNOW HILL	[illegible]	[illegible]

NO	TOWNS	POP	
25	WEAVERVILLE	[illegible]	[illegible]
26	WEST JEFFERSON	[illegible]	[illegible]
27	WHITAKERS	[illegible]	IR
28	WINTERVILLE	[illegible]	[illegible]
29	[illegible]		[illegible]
	TOWNS 500 TO 800 ◐		
1	BALFOUR	[illegible]	[illegible]
2	BENTON HEIGHTS	[illegible]	[illegible]
3	BLADENBORO	[illegible]	[illegible]
4	BLOWING ROCK	[illegible]	[illegible]
5	CANDOR	[illegible]	[illegible]
6	CAROLINA BEACH	[illegible]	[illegible]
7	CLYDE	[illegible]	FS
8	CREEDMORE	[illegible]	FS
9	DENTON	677	IR
10	ELLERBE	[illegible]	[illegible]
11	FAISON	[illegible]	[illegible]
12	HIGHLANDS	[illegible]	USS
13	HOT SPRINGS	778	USS
14	HUNTERSVILLE	[illegible]	[illegible]
15	JACKSON	[illegible]	[illegible]
16	KENANSVILLE	[illegible]	[illegible]
17	LINVILLE	500	[illegible]
18	LILESVILLE	[illegible]	[illegible]
19	MARS HILL	[illegible]	USS
20	MIDDLESEX	[illegible]	[illegible]
21	NORVEN	[illegible]	[illegible]
22	[illegible] 2	[illegible]	[illegible]
23	OAKBORO	[illegible]	[illegible]
24	OLD FORT	[illegible]	USS
25	PEMBROKE	[illegible]	IR
26	PINE TOPS	[illegible]	[illegible]
27	PISGAH FOREST I	[illegible]	[illegible]
28	PRINCETON	[illegible]	[illegible]
29	RICHLANDS	[illegible]	[illegible]
30	ROSE HILL	[illegible]	[illegible]
31	SEABOARD	[illegible]	GW
32	SALUDA	[illegible]	USS
33	SPARTA	[illegible]	[illegible]
34	STANTONSBURG	[illegible]	[illegible]
35	STAR	[illegible]	GW
36	STONEVILLE	[illegible]	[illegible]
37	TROUTMAN	[illegible]	[illegible]
38	VASS	[illegible]	[illegible]
39	WAXHAW	[illegible]	[illegible]
40	WINTON	[illegible]	[illegible]
41	YOUNGSVILLE	[illegible]	[illegible]
42	[illegible]	[illegible]	[illegible]
43	YADKINVILLE	[illegible]	[illegible]
44	BAILEY	[illegible]	GW
45	MANTEO	[illegible]	[illegible]
46	SEAGROVE	[illegible]	GW
47	HOLLY RIDGE		GW
48	BOILING SPRINGS	[illegible]	[illegible]
49	CLEVELAND	500	GW
	TOWNS UNDER 500 ●		
1	BAKERSVILLE I	437	GW
2	BANNER ELK I	[illegible]	GW
3	BAT CAVE I	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]
5	BRIGHT WATERS 2	[illegible]	[illegible]

NO	TOWNS	POP	
6	[illegible]	327	GW
7	CATAWBA	402	GW
8	CHEROKEE	225	USS
9	CHIMNEY ROCK	200	GW
10	CLAREMONT	467	[illegible]
11	COLERAIN	307	GW
12	COLUMBUS	380	FS
13	CROSSNORE I	266	GW
14	DANBURY I	300	GW
15	DILLSBORO	230	USS
16	ELK PARK	467	[illegible]
17	ELON COLLEGE	[illegible]	[illegible]
18	FLAT ROCK 2	318	USS
19	FOUNTAIN	483	[illegible]
20	[illegible]	435	[illegible]
21	GROVER I	452	[illegible]
22	HALIFAX	376	IR
23	HAMILTON LAKES I	88	FS
24	HAYESVILLE	338	[illegible]
25	HIAWASSEE	28	FS
26	HOOKERTON	318	GW
27	JEFFERSON I	304	GW
28	KURE BEACH I	30	GW
29	LAKE JUNALUSKA I	300	FS
30	LAKE LURE	212	GW
31	LANSING I	274	GW
32	LAUREL PARK I	171	USS
33	LITTLE SWITZERLAND	[illegible]	GW
34	LUCAMA	[illegible]	IR
35	LYNN I	230	GW
36	MILTON	[illegible]	GW
37	MONCURE C.P.&L. CO.	166	FS
38	MONTREAT I	100	USS
39	MONTEZUMA I	150	GW
40	MOUNTAIN HOME	150	GW
41	NEWLAND	471	GW
42	NIAGARA I	24	GW
43	PIKEVILLE	425	GW
44	PINE BLUFF	330	GW
45	POLLOCKSVILLE	405	GW
46	RIDGECREST I	100	USS
47	ROARING GAP I	24	GW
48	ROBBINSVILLE	[illegible]	USS
49	RUTH I	318	FS
50	TAPOCO I	100	USS
51	TUXEDO I	400	USS
52	WAGRAM	[illegible]	GW
53	WARRENSVILLE I	150	GW
54	WATERVILLE I	140	[illegible]
55	WEBSTER	[illegible]	[illegible]
56	WHITTIER	[illegible]	GW
57	WISE	[illegible]	GW
58	WRIGHTSVILLE BEACH	[illegible]	GW
59	BATTLEBORO	[illegible]	GW
60	PINEOLA	[illegible]	GW
61	WOODLAND	[illegible]	GW
62	BOONVILLE	[illegible]	GW
63	[illegible]	[illegible]	GW
64	[illegible]	[illegible]	[illegible]
65	[illegible]	[illegible]	GW
	ABANDONED		

AIRPORTS & SANITARY DISTRICTS

NO	NAME	POP SERVED	
1	BEAVERDAM S.D.	650	USS
2	[illegible] S.D.	1500	FS
3	CANEY VALLEY S.D.	510	USS
4	CHARLOTTE AIRPORT	3000	FS
5	[illegible] HILL S.D.	500	USS
6	EAST LENOIR S.D.	300	FS
7	ENKA CORP	2000	USS
8	FAIRVIEW S.D.	310	USS
9	[illegible] AIRPORT	[illegible]	[illegible]
10	HAZEL S.D.	[illegible]	USS
11	[illegible] S.D.	[illegible]	FS
12	[illegible]	[illegible]	FS
13	RALEIGH AIRPORT	100	[illegible]
14	ROANOKE RAPIDS S.D.	[illegible]	FS
15	RURAL HALL S.D.	600	[illegible]
16	S. BUNCOMBE S.D.	[illegible]	USS
17	SWANNANOA S.D.	[illegible]	USS
18	[illegible] S.D.	[illegible]	[illegible]
19	[illegible] S.D.	[illegible]	[illegible]
20	YANCEYVILLE S.D.	800	[illegible]
21	SPRING LAKE S.D.	[illegible]	[illegible]

LEGEND

POPULATION	WITH WATER SUPPLIES	WITHOUT WATER SUPPLIES
TOWNS OVER 1000	●	○
TOWNS 800 TO 1000	●	●
TOWNS 500 TO 800	◐	◐
TOWNS UNDER 500	●	

TOWNS WITH PRIVATELY OWNED SUPPLIES I
TOWNS FURNISHED BY OTHER TOWNS 2
TOWNS WITH PLANTS UNDER CONSTRUCTION 0

TOWNS WITH FILTERED SURFACE SUPPLIES FS
TOWNS WITH UNFILTERED SURFACE SUPPLIES USS
TOWNS WITH GROUND WATER GW
TOWNS WITH GROUND WATER (IRON REMOVAL) IR

SUMMARY

SIZE OF TOWN	WITH WATER SUPPLIES NO	WITH WATER SUPPLIES TOTAL POP	WITHOUT WATER SUPPLIES NO	WITHOUT WATER SUPPLIES TOTAL POP
OVER 1000	174	1,254,908	5	[illegible]
800 TO 1000	[illegible]	[illegible]	[illegible]	[illegible]
500 TO 800	[illegible]	[illegible]	[illegible]	[illegible]
UNDER 500	[illegible]	[illegible]		
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]

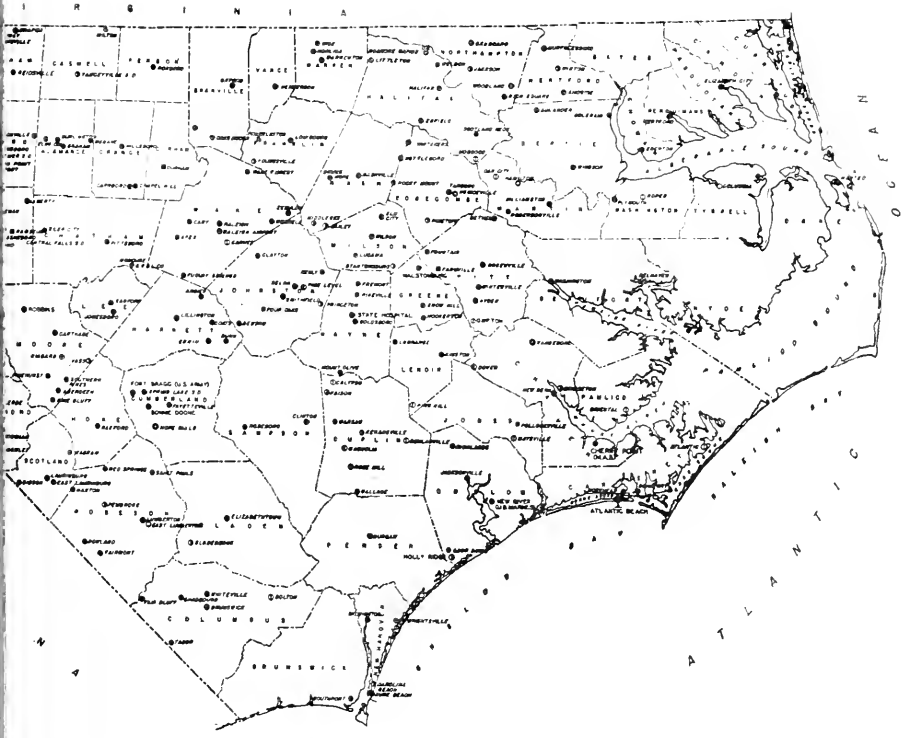
SOURCE OF SUPPLY	NO OF TOWNS	TOTAL POP
FILTERED SURFACE SUPPLIES	[illegible]	[illegible]
UNFILTERED SURFACE SUPPLIES	[illegible]	[illegible]
GROUND WATER	[illegible]	[illegible]
GROUND WATER (IRON REMOVAL)	[illegible]	[illegible]
	[illegible]	[illegible]

NOTE 1940 POPULATION USED WHEN AVAILABLE

TOWNS WITHOUT PUBLIC WATER SUPPLIES

NO	TOWNS	POP
	TOWNS OVER 1000 ○	
1	ARCHDALE	[illegible]
2	COLUMBIA	[illegible]
3	[illegible]	[illegible]
4	EAST LUMBERTON	[illegible]
5	[illegible]	[illegible]
	POLLUTED SUPPLY &	
	TOWNS 800 TO 1000 ●	
1	EAST LAURINBURG	[illegible]
2	FOUR OAKS	[illegible]
3	FRANKLINVILLE	[illegible]
4	HOPE MILLS	[illegible]
5	[illegible]	[illegible]
6	PRINCEVILLE	[illegible]
7	TRINITY	[illegible]
8	[illegible]	[illegible]
9	AVONDALE &	1000

NO	TOWNS
	TOWNS 500 TO [illegible]
1	[illegible]
2	ATLANTIC
3	GRIFTON 0
4	[illegible]
5	[illegible]
6	BOLTON
7	[illegible]
8	CALYPSO
9	CLEVELAND
10	DOBSON
11	DOVER
12	GARNER
13	GLEN ALPINE
14	GRANITE QUARRY
15	[illegible]
16	[illegible]
17	HUDSON
18	ICEMORLEE
19	MAGNOLIA
20	[illegible]
21	MAYSVILLE
22	OAK CITY
23	ORIENTAL
24	[illegible]
25	[illegible]
26	ROPER
27	[illegible]
28	[illegible]
29	WINGATE
30	[illegible]
31	PINK HILL



PUBLIC WATER SUPPLY MAP OF NORTH CAROLINA

SHOWING ALL TOWNS WITH PUBLIC WATER SUPPLIES
AND ALL
TOWNS OVER 500 WITHOUT PUBLIC WATER SUPPLIES
PREPARED BY THE STATE BOARD OF HEALTH

JANUARY 1947 RALEIGH, N C

MUNICIPALITY	Ownership	Population 1940	Date Installed	Rated Capacity M.G.D.	SOURCE	TREATMENT PROCESSES																	STORAGE 1000 Gals.		
						Aeration	Pre-Chlorine	Coagulation	Sedimentation	Filtration	Sec. Alkali	Ammonia	Post-Chlorine	Act. Carbon	Calgon	Hypochlorite	Iron Removal	Manganese Removal	Softening		Lab. Control: Chem.	Lab. Control: Bact.	Ground Surface	Elevated	Total
Gastonia	M	21,313	1900	4.66	Long Creek (imp)	-	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	990	1,300	2,290
Gibson	M	435	1925		Shallow Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Gibsonville	M	1,753	1922	0.21	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	154	75	229
Goldsboro Goldsboro Hospital	M	17,274	1892	2.0	Little River	-	x	x	x	x	x	x	x	x	-	-	-	-	-		x	x	500	1,000	1,500
Graham	M	4,339	1906	0.25	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	500	75	575
Granite Falls	M	1,873	1934	0.30	Catawba River (imp)	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	35	100	135
Greensboro	M	59,319	1923	6.0	Reedy Fork Creek (imp)	-	-	x	x	x	x		x	-	-	-	-	-	-		x	x	21,000	150	21,150
Proximity Mfg. Co.	P			3.5	Reedy Fk. & New Lake	-	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	100	75	175
Fontana Dam	G		1940	0.86	Surface Supply (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	100	242	342
Greenville	M	12,674		1.5	Tar River	x	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	600	1,800	2,400
Grover	P	469			Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		25	25
Halifax	M	374	1940	0.075	Deep Wells	x		x	-	x_p	-	-	-	-	-	x	x	-	-		-	-	0.0	0.0	75
Hamlet	M	5,111	1908	1.5	Marks Creek (imp)	-	x	x	x	x	x	-	x	-	x	-	-	-	-		x	x	200	250	450
Hayesville	M	336	1928	0.012	Springs	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	30	40	70
Henderson	M	7,647	1927	2.0	E. Sandy Creek (imp) W. Sandy Creek (imp)	-	x	x	x	x	x		x	x	-	-	-	-	-		x	x	750	100	850
Hendersonville	M	5,381	1923	2.0	N. Fk. Mills River Bradley Creek	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-		5,000	5,000
Hertford	M	1,959	1920	0.15	Shallow Wells	x	x	x	x	x	-	-	-	-	-	x	-	-	-		x	x	150	160	210
Hiwassee	G	250	1938	0.15	Hiwassee River (imp)		x	x	x	x	x	-	x	-	-	-	-	-	-		x	x	50	50	100
Hickory	M	13,487	1905	3.0	Catawba River (imp)	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	250	8,20.4	1,070.4
Highlands	M	569	1925		Houstin's Branch (imp) Bad Branch (imp)	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	70	70
High Point	M	38,495		6.0	Deep River (imp)	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	3,000	1,000	4,000
Hillsboro	M	1,311	1936	0.288	Eno River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	50	220	270
Hookertan	M	319	1924	0.08	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75

Hot Springs	M	773	1911	0.5	Spring & Coscade Br.	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	0.0	80	80
Huntersville	M	763	1926	. . . .	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Jackson	M	758	1937	0.06	Shallow Wells	-	-	-	-	-	x	-	-	-	-	-	-	-	-		-	-	100	75	175
Jacksonville	M	873	1922	0.86	Deep Wells	x	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	45	260	305
Jefferson	P	304	1941	0.02	Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	16	16
Kannapolis	P	12,000	1927	2.0	Buffalo Creek (imp)	-	x	x	x	x	x	x	x	-	x	-	-	-	-		x	x	340	575	915
Kennansville	M	571	1934		Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Kenley	M	1,095	1935	0.144	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Kernersville	M	2,103	1926	1.0	Hammonds Cr. (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	300	100	400
Kings Mountain	M	6,547	1928	1.0	King Cr. imp. in City Lake	x	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	300	500	800
Kinston	M	15,388	1904	. .	Deep Wells	-	-	-	-	-	-	-	x	-	-	-	-	-	-				1,400	500	1,900
Kure Beoch	P	350	1915	0.2	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	36	36
LaGrange	M	1,647	1917	. . . . .	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Loke Lure	M	212	1938	0.072	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Lansing	P	274	1922	0.02	Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	20	20
Laurinburg	M	5,685	1906	1.0	Jordan's Cr. (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	300	500	800
Lawndale	P	1,006		. . . . .	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	. . .	. . . . .	. . . . .
Leaksville	P	1,886	1922	1.00	Dan River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	500	185	685
Lenoir	M	7,598	1908	1.5	Zacks Fork	x	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	500	500	1,000
Lexington	M	10,550	1927	2.0	Abbatts Creek Leonords Creek (imp)	-	-	x	x	x	x	-	x	x	-	-	-	-	-		x	x	650	1,000	1,650
Liberty	M	873		0.266	Deep Wells	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	120	120
Lilesville	M	556	1940	0.057	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	50	50
Lillington	M	914	1919	0.16	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Lincolnton	M	4,525	1926	0.75	Walker Branch (imp)	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	285	225	510
Linville	P	540	1924	. . . . .	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	. . .	. . .	. . .
Little Switzerland	P	175	1936	.	Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	20	20
Littleton	M	1,200	1921		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	100	60	160
Louisburg	M	2,309	1905	0.5	Tar River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	750	283	1,033

MUNICIPALITY	Ownership	Population 1940	Date Installed	Rated Capacity M.G.D.	SOURCE	TREATMENT PROCESSES																STORAGE 1000 Gals.		
						Aeration	Pre-Chlorine	Coagulation	Sedimentation	Filtration	Sec. Alkali	Ammonia	Post-Chlorine	Act. Carbon	Calgon	Hypochlorite	Iron Removal	Manganese Removal	Softening		Lab. Control: Chem.	Lab. Control: Bact.	Ground Surface	Elevated	Total
Lucama	M	362	1937	0.06	Deep Well	x	x	x	x	x_p	-	-	-	-	-	-	x	-	-		x	-	0.0	100	0.0
Lumberton	M	5,803	1914	1.0	Lumber River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	750	366	1,116
Lynn	P	827			Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-			
Maiden	M	1,803	1923		Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Manteo	M	571	1940		Deep Wells	x	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	260	100	360
Marion	M	2,889	1925		Mackey Cr. & Clear Cr.	-	-	-	-	-	-	x	x	-	-	-	-	-	-		-	-	0.0	1,300	1,300
Marshall	M	1,160	1922	0.2	Hunter Creek (imp)	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	1,125	1,125
Mars Hill	M	517	1924	0.21	Laurel Creek	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	350	350
Moxton	M	1,656	1908		Deep Wells	x	-	-	-	-	x	-	-	-	-	-	-	-	-		-	-	200	75	275
Mayodan	P	2,323	1927	0.9	Moyo River	-	x	x	x	x	x	-	x	-	-	-	-	-	-		x	x	116	75	191
Mebane	M	2,060	1922	0.5	Mill Creek	-	-	x	x	x	-	-	x	-	-	-	-	-	-		x	x	250	75	325
Middlesex	M	545	1934		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Milton	M	329	1939		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	60	60
Mocksville	M	1,607	1924	0.1	8 Deep Wells	(New plant under construction)										x	(One Well)				-	-	100	100	200
Moncure	P	145		0.07	Cape Fear River	-	-	x	x	x_p	x		x	-	-	-	-	-	-		-	-		Yes	Yes
Monroe	M	6,475	1927	2.0	Richardsons Cr. (imp)	-	-	x	x	x	x	-	x	-	x	-	-	-	-		x	x	960	165	1,125
Montreat	P P	S-5,000 W-500	1906 1906		Piney Branch (imp)	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	75	75
Mooresville	M	6,682	1924	0.72	Byers Creek (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	500	100	600
Morehead City	P	3,695			Deep Wells	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	120	120
Morganton	M	7,670	1903	1.5	Henry Fork River (imp)	-	-	-	-	-	-	x	x	-	-	-	-	-	-		-	-	0.0	1,500	1,500
State Deaf School	S				Surface Supply (imp)	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	500	90	590
State Hospital	S				Surface Supply (imp)	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	500	25	525
Mount Airy	M	6,266	1904	1.5	Lovills Creek	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	665	350	1,015
Mount Gilead	M	915	1925	0.25	Pee Dee River (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	250	100	350

Mount Holly	M	2,055	1925	1.0	Catawba River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	350	275	625
Mount Olive*	M	2,929	1925	0.576	Deep Wells (3)	x	-	x	x	x	-	-	-	-	-	x	x	-	-		x	-	115	75	190
Mount Pleasant	M	1,017	1937	.	Deep Well	x	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	Yes	Yes	Yes
Murfreesboro	M	1,550	.	0.58	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Murphy (1)	M	1,873	...		Marble Creek (imp)	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	...	7,000	7,000
Murphy (2)			1926	0.72	Hiwassee River	-	-	x	x	x	-	-	x	-	-	-	-	-	-		x	-	300	...	300
Noshville	M	1,171	1915	. .	Deep Wells (2)	-	-	-	-	-	x	-	-	-	-	-	-	-	-		-	-	0.0	75	75
New Bern	M	11,815	1927	3.0	Deep Wells (8)	-	-	-	-	-	-	x	x	-	-	-	-	-	-		-	-	200	60	260
Newland	M	471	1937	...	Deep Well (1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	200	200
Newton	M	5,407	1927	1.0	Jacobs Fork River Hildebran Creek (imp)	-	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	300	75	375
Niagara	P	120	1905	0.04	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	Yes	Yes
Norlina Water Co.	P	794		0.14	Deep Wells	(New town supply to be installed soon)															-	-	0.0	6	6
N. Wilkesboro	M	4,472	1909	1.0	Reddies River (imp)			x	x	x	x	-	x	-	-	-	-	-	-		x	x	150	440	590
Norwood	M	1,515		. .	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Oakboro	M	503	1938	.	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Old Fort .	M	774	1914	..	Jarretts Cr. (imp)	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	300	300
Oxford	M	3,991		1.0	Tar River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	500	100	600
Pembroke	M	783	1940		Deep Well	x	-	x	x	-	-	-	x	-	-	-	x	-	-		-	-	25	75	100
Pikeville	M	425	1936	.	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	50	50
Pilot Mountain	M	925	1936		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Pine Bluff	M	330	1926		Springs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	60	60
Pineola	P	300			Springs	-	-	-	-	-	-	-	-	-	-	x	-	-	-		-	-	0.0	15	15
Pinehurst	P	1,600		0.75	Rattlesnake Creek	-	-	-	-	x	-	-	x	-	-	-	-	-	-		-	-	200	200	400
Pinetops	M	713	1926	0.018	Deep Wells (2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Pineville	M	1,144	1939		Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Pikeville	M	425	1939	0.043	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75

MUNICIPALITY	Ownership	Population 1940	Date Installed	Rated Capacity M.G.D.	SOURCE	TREATMENT PROCESSES																STORAGE 1000 Gals.		
						Aeration	Pre-Chlorine	Coagulation	Sedimentation	Filtration	Sec. Alkali	Ammonia	Post-Chlorine	Act. Carbon	Calgon	Hypochlorite	Iron Removal	Manganese Removal	Softening		Lab. Control: Chem.	Lab. Control: Bact.	Ground Surface	Elevated	Total
Pittsboro	M	826	1936	.	Inf. Gal. & Well	-	-	-	-	-	-	-	x	-	-	x	-	-	-		-	-	50	60	110
Plymouth	M	2,461	1915	0.288	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Plymouth Country Club	P	.	1940	.	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	2	2
Princetan	M	512	1939	0.012	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Raeford	M	1628	1916	.288	Deep Wells (2)	x	-	-	x	-	x	-	x	-	-	-	x	-	-		-	-	100	75	175
Raleigh	M	46,897	1885	6.0	Wolnut & Swift Creeks	-	-	x	x	x	x	x	x	x	-	-	-	-	-		?	?	5,000	1,350	6,350
Ramseur	M	1,220	1936	0.288	Sandy Creek	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	125	75	200
Randleman	M	2,032	1935	0.25	Pole Cat Creek	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	30	75	105
Red Springs	M	1,559	1910	.	Wells	x	-	-	-	x_p	x	-	-	-	-	-	x	-	-		-	-	0.0	150	150
Reidsville	M	10,387	1899	1.5	Brd. Troublesome Creek	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	900	1,555	2,455
Rhodhiss Mills	P	930	1940	0.288	Deep Wells	-	-	-	-	x_p	x	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Richlands	M	688	1935	0.125	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Rich Square	M	942	1936	0.72	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Ridgecrest	P P	S-1,600 W-300	.....	.....	Ridgecrest Branch	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	100	100
Roanoke Rapids	P	8,545	1933	2.28	Roanoke River	-	x	x	x	x	x	x	x	x	-	-	-	-	-		x	x	1,250	500	1,750
Riverbend	P	450	.	0.025	Catawba River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	0.0	5	5
Rabbins	M	972	1937	1.00	Beor Creek	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	100	350	450
Robbinsville	M	399	1926	.	Rock Cr. & Burgins Cr.	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	1,000	75	1,075
Robersonville	M	1,407	1924	0.11	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	75	100	175
Rockingham	M	3,657	1927	1.0	Falling Creek (imp)	-	-	x	x	x	x	-	x	x	-	-	-	-	-		x	x	300	100	400
Rockwell	M	825	1937		Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Racky Mount	M	25,567		6.75	Tar River	-	-	x	x	x	x	x	x	-	x	-	-	-	-		x	x	3,500	1,000	4,500
Roseboro	M	939	1926	0.28	Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Rose Hill	M	727	1940		Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100

Rowland	M	1,000	1914	... ...	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Rural Hall (S.D.)	M	850	1938	0.086	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	60	60
Roxboro	M	4,599	1924	1.25	Story Creek (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	0.0	500	500
St. Pauls	M	1,920	1936	.	Deep Well	x	x	x	x	-	-	-	-	-	-	-	x	-	-		-	-	100	75	175
Salisbury	M	19,037	1916	3.0	Yadkin River	-	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	1,750	250	2,000
Saluda (1)	M	539	1926	0.2	Branch & Kelly Creek	-	-	x	x	x	-	-	x	-	-	-	-	-	-		-	-	0.0	500	500
Saluda (2)	M			. .	Springs	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-		. .	. .
Sanford	M	4,960	1901	1.4	Lick Creek (imp)	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	760	250	1,010
Scotland Neck	M	2,559		0.5	4 Deep Wells	x	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	250	75	325
Seaboard	M	562	1940	0.108	2 Deep Wells	x	x	x	x	xp	-	-	-	-	-	-	x	-	-		x	-	0.0	100	100
Selma	M	2,007	.	0.5	Deep Wells	x	-	-	-	xp	x	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Shelby	M	14,037	1925	2.0	1st Broad River (imp)	-	-	x	x	x	x	x	x	x	-	-	-	-	-		x	x	200	1,000	1,200
Siler City	M	2,197	1925	0.5	Rocky River	-	-	x	x	x	x	x	x	-	-	-	-	-	-		x	x	100	150	250
Smithfield	M	3,678	1912	0.5	Neuse River	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	200	100	300
Snow Hill	P	928	1922		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	50	50	100
Southern Pines	M	3,225	1897	1.0	Surface Supply (imp)		x	x	x	x	x	-	x	x	-	-	-	-	-		x	x	500	300	800
Southport	M	1,760	1914	0.5	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	100	100	200
Sparta	M	648	1938	. . .	Deep Wells (2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Spindale	P	3,952	1927	4.0	Hollands Cr. - Catheys Cr.	-	x	x	x	x	x	-	-	-	-	-	-	-	-		x	x	500	185	685
Spray	P	3,000	1937	4.0	Smith River	-	x	x	x	x	x	-	x	-	-	-	-	-	-		x	x	100	100	200
Spring Hope	M	1,222	1920	0.15	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Spruce Pine	M	1,968	1924	1.35	Beaver & Crystal Creek (imp)	-	-	-	-	-	-	x	x	-	-	-	-	-	-		-	-	0.0	840	840
Stanley	M	1,036	1935	.	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Stantonburg	M	595	1924	0.14	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	30	30
Star	M	611	1925		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Statesville	M	11,441	1918	1.5	Gregory Branch	-	-	x	x	x	x	-	x	-	-	-	-	-	-		x	x	1,080	240	1,320
Stoneville	M	615	1937		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Sylva	M	1,409	1922	0.8	Dills Cr. & Fisher Cr.	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	288	288
Tabor City	M	1,552	1925		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	270	75	345
Tapoco	P	200	1916	0.36	Yellow Hammer Creek	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	70	70

MUNICIPALITY	Ownership	Population 1940	Date Installed	Rated Capacity M.G.D.	SOURCE	TREATMENT PROCESSES															STORAGE 1000 Gals.		
						Aeration	Pre-Chlorine	Coagulation	Sedimentation	Filtration	Sec. Alkali	Ammonia	Post-Chlorine	Act. Carbon	Calgon	Hypochlorite	Iron Removal	Manganese Removal	Softening	Lab. Control: Chem.	Lab. Control: Bact.	Ground Surface	Elevated	Total
Tarboro	M	7,148	1889	1.5	Tar River	-	x	x	x	x	x	x	x	-	-	-	-	-	-	x	x	1,335	200	1,535
Taylorsville	M	1,122	1922	0.504	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	275	325
Thomasville	M	11,041	1923	1.5	Abbotts Creek	-	x	x	x	x	x	-	x	-	-	-	-	-	-	x	x	480	100	580
Troy	M	1,861	1923	0.5	Denson Creek (imp)	-	-	x	x	x	x		x	x	-	-	-	-	-	x	x	300	75	375
Trautman	M	566	1923		Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	60	60
Tryon	M	2,043	1926	1.0	Little Fall Creek Big Fall Creek (imp)	-	-	x	x	x	-	-	x	-	-	-	-	-	-	-	-	0.0	240	240
Tuxedo	P	600	.	. .	Surface Supply	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	0.0	200	200
Valdese	M	2,615	1932	0.5	Michael's Creek	x		x	x	x	x	-	x	-	-	-	-	-	-	x	x	200	150	350
Vass	M	728	1927	.	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	100	100
Wadesboro	M	3,587	1912	1.0	Janes Creek (imp)	-	x	x	x	x	x	x	x	-	-	-	-	-	-	x	-	500	375	875
Wagram	M	388	1927	0.1	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	50	50
Wake Forest	M	1,562	1921	0.45	Smith Cr. & Alston Br.	-	-	x	x	x	x		x	-	-	-	-	-	-	x	x	60	375	435
Wallace	M	1,050	1926	.	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	75	75
Walstanburg	M	198		.	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	60	60
Walnut Cove	M	1,084	1926		Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	75	75
Warrentan	M	1,147	1916		Deep Wells	x	x	x	x_p	x			x				x			-	-	0.0	60	60
Warrensville	P	150	1940	0.03	Spring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	15	15
Warsaw	M	1,483	1919	0.187	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	75	75
Washington	M	8,569	1902	1.0	Deep Wells, Tranters Cr.	-	-	x	x	x	-	-	x	-	-	-	-	-	x	-	-	500	300	800
Waterville	P	40	1931		Big Creek	-	-	-	-	x_p	-	-	x	-	-	-	-	-	-	-	-	0.0	30	30
Waynesville	M	2,940	1907	1.0	Surface Supply (imp)	-	x	-	-	x	-	-	x	-	-	-	-	-	-	-	-	0.0	1,250	1,250
Weaverville	M	880	1913		Ox Cr. & Wagner Br.	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	0.0	100	100
Waxhaw	M	611	1940		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	75	75
Weldon	M	2,341	1908	1.0	Roanoke River	-	x	x	x	x	x	-	x	-	-	x	-	-	-	x	x	500	80	580
Wendell	M	1,132	1920		Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	75	75

West Jefferson	M	883	1922	0.2	Springs & Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	225	225
Whitokers	M	883	1937	0.036	Shallow Wells	x	x	x	x	xp	-	-	-	-	-	-	x	-	-		x	-	0.0	100	100
Whiteville	M	3,011	1924	0.9	Deep Wells	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	100	60	160
Wilkesboro	M	1,309	1926	0.13	Little Cub Creek	-	-	-	-	-	-	x	x	-	x	-	-	-	-		-	-	0.0	200	200
Williamston	M	3,966	1919	1.0	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	25	75	100
Wilmington	M	33,407	1881	7.0	Cape Fear River	-	x	x	x	x	x	x	x	x	-	-	-	-	-		x	x	5,000	150	5,150
Wilson	M	19,234	1896	3.0	Contentnea Creek	-	x	x	x	x	x	x	x	-	-	-	-	-	-		x	x	2,200	1,000	3,200
Windsor	M	1,747		0.288	Deep Well	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	100	100
Winston-Salem	M	79,815	1890	12.0	Surface Supply (imp)	-	x	x	x	x	x	-	x	-	-	-	-	x	-		x	x	4,100	1,250	5,350
Winterville	M	848	1939	0.085	Deep Wells	-	-	-	-	xs	-	-	-	-	-	-	-	-	x		-	-	0.0	75	75
Winton	M	733	1939	1.0	Deep Wells (3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	30	30
Wise	P	300	1938	......	Deep Well	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Woodfin (S.D.)	SD	6,000		1.0	Reems Creek	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	1,000	1,000
Woodland	M	486	1941	0.17	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	100	100
Wrightsville Beach	M	252	1910	0.64	Deep Wells	-	-	-	-	-	-	-	x	-	-	-	-	-	-		-	-	0.0	75	75
Yadkinville	M	734	1941	0.07	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Yanceyville (S.D.)	SD	500	1937	......	Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Youngsville	M	553	1940	0.88	Deep Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	0.0	75	75
Zebulon	M	1,070	1920	0.2	Little River (imp)	-	-	x	x	x	-	-	x	-	-	-	-	-	-		-	-	100	100	200

Communities Served By Water Supplies of Other Communities

MUNICIPALITY	Ownership	Population 1940	Date Installed	Rated Capacity M.G.D.	SOURCE	TREATMENT PROCESSES																	STORAGE 1000 Gals.		
						Aeration	Pre-Chlorine	Coagulation	Sedimentation	Filtration	Sec. Alkali	Ammonia	Post Chlorine	Act. Carbon	Calgon	Hypochlorite	Iron Removal	Manganese Removal	Softening		Lab. Control: Chem.	Lab. Control: Bact.	Ground Surface	Elevated	Total
Belfour	P	450			Hendersonville																		0.0	100	100
Beover Dam (S.D.)	SD	650			Asheville																		0.0	0.0	0.0
Benton Heights	M	768			Monroe																		0.0	75	75
Bessemer (S.D.)	SD	3,567	1940		Greensboro																		250	100	350
Biltmore Forest	M	476			Asheville																				
Boger City	M	100			Lincolnton																				
Busbee (S.D.)	SD	1,300			Asheville																		0.0	50	50
Coney Valley (S.D.)	SD	510			Asheville																		0.0	0.0	0.0
Corboro	M	1,455			Chopel Hill																		0.0	100	100
Cornelius	M	1,195	1937		Davidson																				
Crescent Hills (S.D.)	SD	650			Asheville																		0.0	0.0	0.0
Dallas	M	1,704			Gastonia																		0.0	100	100
Druid Hills (S.D.)	SD	500			Hendersonville																				
East Flat Rock	M	1,103			Hendersonville																		0.0	0.0	0.0
East Lenoir (S.D.)	SD	500			Lenoir																		0.0	0.0	0.0
East Spencer	M	2,181			Solisbury																				
Enka Corp.	P	800			Asheville																				
Erwin	M	3,500			Dunn																				
Fairview (S.D.)	SD	310			Asheville																		0.0	0.0	0.0
Flat Rock	M	S-2,000			Hendersonville																		0.0	0.0	0.0
Hamilton Lakes	M	98			Greensboro																		0.0	0.0	0.0
Hazel (S.D.)	SD	1,250			Asheville																		0.0	0.0	0.0
Hazelwood	M	1,508			Waynesville																		0.0	300	300

Jonesboro	M	928	...	...	Sanford																		.	.	
Jonesville	M	1,733	...	...	Elkin																		.	..	.
Lake Junaluska	P P	W-250 S-5,000	...	...	Waynesville																		0.0	0.0	0.0
Laurel Park	M	171	...	...	Hendersonville																		500	100	600
Longview	M	1,489	...	...	Hickory																		0.0	75	75
Lowell	M	1,826	...	...	Gastonia																			...	.
Madison	M	1,683	...	...	Mayodan																		0.0	. .	
Marshville	M	1,907	1923	..	Monroe																		50	75	125
Pisgah Forest					Ecusta Power Co.																		0.0	0.0	0.0
Ruth	M	318	...	...	Spindale																		0.0	0.0	0.0
Rutherfordton	M	2,326	...	...	Spindale																		0.0	100	100
Skyland (S.D.)	SD	550	...	...	Asheville																		0.0	0.0	0.0
Spencer	M	3,072	...		Salisbury																		0.0	75	75
Swannanoa	SD	4,400	...	...	Asheville																		0.0	.	

M—Municipality
P—Private
G—Government
SD—Sanitary District
S—State

Xp—Pressure Filter
Xs—Slow Sand Filter
Xz—Zealite Filter

Cold Weather Increases Carbon Monoxide Hazard

Despite repeated warnings about the dangers of carbon monoxide, all too often we still hear of narrow escapes—yes, and even deaths—due to air contaminated with this insidious gas. Cold weather increases the danger. You have to take special care then not to inhale confined air fouled by exhaust gases from automobile engines and faulty heating apparatus. This can easily be done by attention to ventilation.

Protect Yourself

Automotive engineers say that it's a good idea to warm up the engine of your car for a few moments before driving in cold weather. But before stepping on the starter in the family garage, there's an even more important step for you to take: Open wide your garage doors to the outside air. By warming up the car you help protect its metal mechanism. But your protection should come first; by opening the garage for ventilation, you protect your body mechanism by preventing dangerous accumulation of carbon monoxide gas when the motor starts.

Your Nose Doesn't Know

Don't think for a minute that your senses of smell, taste, or sight will warn you beforehand of this danger. Deadly carbon monoxide can't be detected so easily. When pure, it is a colorless, odorless, and tasteless gas. It is highly poisonous because it combines with the coloring matter of blood faster than can oxygen. Further, blood that is filled with carbon monoxide cannot take up oxygen. Just how deadly the gas is can be judged from the fact that exposure to an atmosphere containing two-tenths of one per cent will cause a man at rest—such as a person waiting for the car to warm-up—to collapse within an hour. Exposure to as little as five-hundredths of one per cent can cause a headache within a few hours. Different people are affected differently: a person at work will be overcome much quicker than one at rest.

Prompt Action Important

Symptoms of carbon monoxide poisoning come without warning, and collapse of the person exposed to the gas may prove fatal unless outside aid arrives soon. A running car engine would continue to generate carbon monoxide—and continue to make the air more poisonous. If you should ever find a person overcome in a garage, throw the windows and doors wide open and at once remove the patient to fresh air. Call a doctor and while awaiting his arrival give artificial respiration continuously until the doctor arrives or until natural breathing is restored.

Other Danger Points

The dangers of carbon monoxide poisoning are not limited to home garages. Unless commercial garages maintain good ventilation, enough carbon monoxide gas may be expelled from the exhaust of automobile engines to make the air poisonous. Nor is the danger confined to areas subject to exhaust gases of auto engines. Trouble is also possible from faulty gas hot water heaters, improperly vented kitchen gas ranges or gas plates for heating water in the laundry, and from stoves or furnaces.

Usually, deaths and illness from carbon monoxide can be prevented by constant attention to the following:

1. Open garage doors before starting Automobile engines.
2. Be sure hot water gas heaters are vented to the outside air.
3. Make certain that all gas burning appliances are burning properly.
4. Adjust furnace and stove drafts to carry off gases.

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Vol. 62 MARCH, 1947 No. 3

A Modern Dishwasher in a North Carolina Restaurant

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
Appendicitis
Cancer
Constipation
Chickenpox
Diabetes
Diphtheria
Don't Spit Placards
Endemic Typhus
Flies
Fly Placards
German Measles
Health Education
Hookworm Disease
Infantile Paralysis
Influenza
Malaria
Measles
Paediculosis
Pellagra
Residential Sewage Disposal Plants
Sanitary Privies
Scabies
Scarlet Fever
Teeth
Tuberculosis
Typhoid Fever
Venereal Diseases
Vitamins
Typhoid Placards
Water Supplies
Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, North Carolina.

Prenatal Care.
Prenatal Letters (series of nine monthly letters.)
The Expectant Mother.
Infant Care.
The Prevention of Infantile Diarrhea.
Breast Feeding.
Table of Heights and Weights.
Baby's Daily Schedule.
First Four Months.
Five and Six Months.
Seven and Eight Months.
Nine Months to One Year.
One to Two Years.
Two to Six Years.
Instruction for North Carolina Midwives.

CONTENTS

THE Health Bulletin
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CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Foodhandlers Conference

Catawba-Lincoln District Health Department

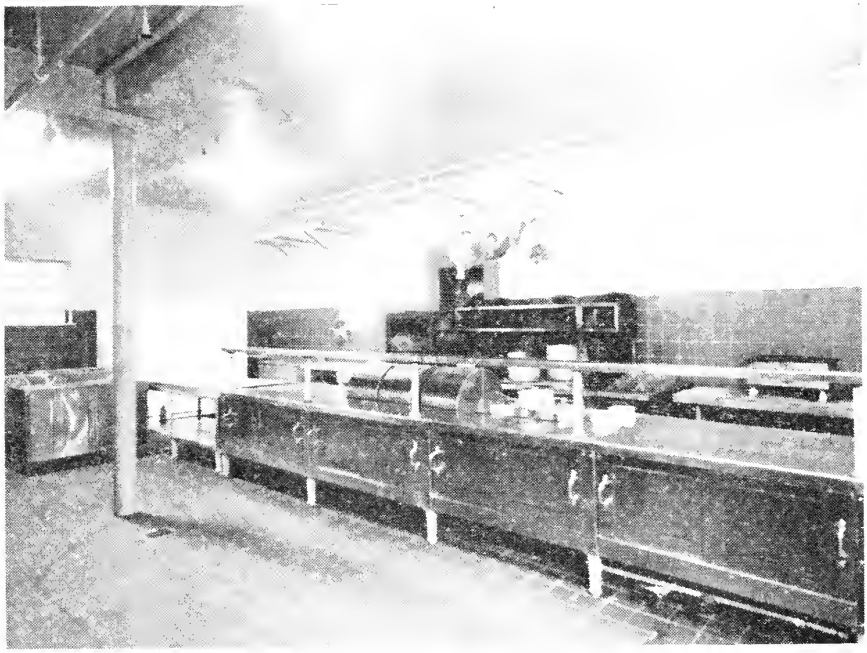
By
SARA WALKER, AB. MSPH
and
THOMAS J. SHARPE, BS

Introduction:

As an official agency charged with the responsibility of protecting and promoting the public health, the Catawba-Lincoln District Health Department is attempting to discharge its responsibilities by developing a program planned with the people and designed to meet their needs. Cooperative planning to be effective in problem solving must be based on public understanding followed with individual and group participation. Increasing numbers of people eating out together with the rapid turnover of foodhandling personnel during the war and post-war period is making the problem of adequate protection for the public more acute and complex. The Catawba-Lincoln District Health Department staff felt that as a public health agency they had a greater responsibility in alleviating the problem than just the routine sanitary inspection of public eating places. Obviously the paramount need is for foodhandlers to understand and to be able to apply the scientific knowledge available on the various means of transmission of diseases in public eating places. This need could be met only through teamwork among the Health Department, Management, and employees. Lack of participation on the part of any one would affect the efforts of the others. The health department staff could provide the technical information and with the help of the other two groups could better protect the public's health through the continuous application of this knowledge. Management could improve the appearance and services of food-handling establishments by utilizing the assistance and guidance offered by the health department staff. The foodhandler through this cooperative effort develops a sense of personal responsibility as he learns and understands the basic rules of health and sanitaition necessary for the safeguarding of his own health and the health of those whom he serves.

Organization:

After a great deal of pre-planning by the Health Director and the sanitarians, the manager of each foodhandling establishment in the three areas of the district were contacted personally by the local sanitarian and invited to come to a meeting in his area to discuss with other managers and members of the health depart-



A Restaurant Kitchen

ment staff the possibilities of organizing Foodhandlers' Conferences.

The excellent attendance at each of the three meetings proved that management was interested in cooperating with the health department in this undertaking. A brief overall summary of the content of the planned instruction was given by the sanitarians who were largely responsible for the organization. The cooperative interest on the part of management now became very active with the managers asking questions as, "When can the conferences begin? Can a schedule be arranged so that it will be possible for all employees to attend?" With these questions satisfactorily answered, the date was set for the conferences to begin.

For convenience of managers and employees, the schedule was so arranged that each of the weekly one and one-half hour conference periods would be given both in the morning and afternoon of the same day for three consecutive weeks.

The complete schedule was sent to each manager by letter. During the two weeks prior to the beginning of the conferences, the local sanitarian called on each manager to talk with him further about the convenience of the schedule.

The generous publicity given by the newspapers through releases from the health department, reports of meeting and editorials, gave impetus to this initial undertaking. The content of the news articles was not designed to create an alarmed public sentiment but rather to focus attention on the coordination of the efforts of the health department and of the foodhandling establishments as they undertook cooperatively to give the public protection through improved foodhandling methods.

Lesson No. 1: Bacteriology and Communicable Disease

I. Introduction:

The health department appreciates the fact that each and everyone of you are cooperating by attending the first lesson in this series. Your presence proves to us that you are interested in learning more about your job so that you will be a more efficient foodhandler.

Your job is important. About sixty-five million people eat out every day in the United States. The people whom you serve expect to get good wholesome food when they come into your respective places of business—they don't expect to get disease germs that will make them sick. So you as foodhandlers have a definite responsibility in doing your part to keep down the spread of communicable diseases.

II. Sound film—"Swat the Fly":

At this time, we would like to show you a moving picture, "Swat the Fly," which explains the life history of the common house fly. Note that the fly breeds rapidly, contaminates food with disease producing germs, and can be controlled by (1) eliminating breeding places—rubbish, garbage, manure heaps, etc.; (2) screening doors and windows; and (3) using fly sprays, traps and swats.

The film does not explain how the fly eats. The fly doesn't have teeth like you and I with which to chew solid food; therefore, when it eats sugar or other solid food, it regurgitates or vomits a liquid from its digestive system to dissolve the solids. Only part of this liquid is drawn back into the body, much of it being left to contaminate the food. There are millions of germs on the hairy body of a fly and in it. These germs are collected from all types of filth such as manure, sewage, spittle, garbage and other germ laden filth, some of which the fly leaves on the food it touches. (Film "Swat the Fly" is shown).

III. Illustrated lecture on Bacteria and Communicable Disease:

A. Introduction

The United States Public Health Service lists sixty-two communicable and reportable diseases, 25 or 40% of which may be transmitted through foodhandling establishments. A larger percentage of these diseases are known as killers, exacting a high death toll from our population. None of you foodhandlers would willingly serve disease germs to your customers in food that would cause sickness, yet it is being done somewhere every day within the United States, either because the foodhandlers do not know how to do the job right or because they are careless and indifferent and do not understand the importance attached to their jobs. It should be the chief aim of each of you, as well as every other foodhandler, to not only serve food which is free from the germs of these diseases, but to serve this food in dishes and glasses that are free from harmful contamination.

B. Bacteriology

1. First, what are some of the causes of communicable diseases. They don't just happen. There are savages in some parts of the world today, who think that diseases are caused by evil spirits. They think that these spirits live in the rocks, trees, and rivers, and that their only purpose in living is to invade man and cause him pain, sickness, and sometimes death. They play peculiar music and wear funny faces trying to drive these evil spirits away so the members of their tribes will not become sick. It hasn't been too long ago when some people in this country believed in witchcraft, thinking that a witch could make people sick by some sort of "spell." We in civilized countries today know that communicable diseases are not caused by evil spirits, but are caused by germs.

2. In order to better understand how to prevent the spread of communicable diseases, it is necessary to understand

the nature of the germs which cause the diseases.

a. Bacteria or germs are so small that they can be seen only through a microscope, which magnifies them about 1,000 times. It would take 25,400 average size bacteria laid side by side to equal one inch. Because they are so small sometimes we fail to realize their existence. We may think they are not here because we cannot see them, but they are here just the same. They are on our hands, under our fingernails, in our hair, deep inside our bodies—they are everywhere. Each of us has more bacteria on and in our bodies than there are people in the whole world.

b. Keep in mind that these little germs are alive. They must have food, moisture and a favorable temperature in order to live.

1. The most favorable temperature for growth is 98.6° F. or body temperature. They cannot survive if the temperature is too hot. For this reason one method of sterilizing dishes is to immerse them in hot water of at least 170° F. for two minutes. This will kill most disease producing germs that might be present.

2. Bacteria cannot reproduce if the temperature is too low; however, refrigeration or freezing does not kill bacteria. Since refrigeration retards the growth of bacteria, be sure to refrigerate all perishable foods at 50° F. or below.

c. Bacteria are able to reproduce extremely rapidly under favorable conditions of temperature, food, and moisture. Within 20 minutes one bacterium may divide and become two, thus within 40 minutes the two may become four. If this process goes on for a period of six hours, one original bacterium may become 250,000.

d. Bacteria are classified into three groups according to shape:

1. Cocci—spherical like a ball: (a) single cells, (b) Diplococci — Twos — pneumonia can be caused by this germ, (c) Streptococci — Chains — one type causes septic sore throat and another causes scarlet fever, (d) Staphylococci — irregular cluster — one type causes food poisoning.

2. Bacilli—rod shaped like a cigar or cigarette—one type causes tuberculosis.

3. Spirilla—shaped like a cork screw —one type causes trench mouth and another type causes syphilis.

One specific germ causes one specific disease. The germ that causes typhoid fever will not cause scarlet fever or any other disease.

e. Fortunately not all bacteria are harmful. (1) The types that cause sickness and sometimes death are our eternal enemies. (2) Another group as far as we know are not much good to us nor much harm to us, and this group is here by the billions. (3) There is still another group without which we couldn't get along very well. These little germs are working for us all the time. We couldn't have cheese, buttermilk, tan leather, make alcohol, and even produce some medicine unless these little bacteria were working for us. In fact, if it were not for certain kinds of this group, the earth would soon become covered with garbage and refuse.

C. Communicable Diseases—So much for bacteria, now let's discuss communicable diseases.

1. By communicable diseases we mean those diseases that can be and are transmitted from one person to another. How does this take place? In order for any disease to be transmitted we must have a source, a channel of infection, and a susceptible person.

a. Source—by the source we mean the place from which the germs come, and this is either a carrier or an infected person who may harbor and discharge bacteria which if consumed by another person might produce this particular disease. An infected person has germs in his system which produce symptoms of disease, while a carrier harbors disease producing germs without symptoms. For example, a person may have had typhoid fever ten years

ago. At that time he was sick; today he may seem to be perfectly well, yet be carrying germs and eliminating them through his intestinal discharges, thus spreading the disease to other people.

b. Channel of infection—by channel of infection we mean the method by which these germs get from one individual to another. They can't walk around as we do, so they have to hitch hike a ride, and in many cases they hitch hike this ride through food and eating utensils. Remember that at least 25 diseases can be spread through our foodhandling establishments.

c. Susceptible person — by this we mean an individual that may get the disease if the germs enter his system.

You foodhandlers cannot do much about the source. The health department tries to control this in certain diseases by quarantine and isolation. Neither can you do much about the susceptible person, but here again the health department tries to control certain diseases by immunization, vaccination and fluoroscopic clinics.

Let's keep in mind that all three things are necessary for disease transmission, so you can do your part by blocking the channel of infection—that is keeping the disease germs from traveling from one customer to another, This channel can be cut in various ways, and you foodhandlers can render a great service to yourself, to your community, and to your country if you will learn and observe the rules of sanitary foodhandling in your respective places of business.

2. Kinds of disease—we usually think of the diseases that can be transmitted through food establishments as being of four kinds:

a. Intestinal born diseases—(Ex. typhoid, dysentery). The germs that cause these diseases are given off through the intestinal discharges of a case or carrier. For example, a foodhandler may have dysentery, use a toilet, fail to wash his hands thoroughly, handle food or food equipment and pass his germs on to someone else. Always wash your hands thoroughly before going to work, after each visit to the toilet and often during the foodhandling operation. Clean hands are perhaps the most important, yet simplest, expedient to prevent food contamination.

b. Respiratory diseases—(Ex. colds, trench mouth, influenza). The germs are given off through the mouth and nose of a case or carrier. For example, a person may have a common cold; he coughs or sneezes into the air, then some individual breathes the germs into his lungs or gets them into his mouth and soon he may have a cold too. Food is often contaminated by bacteria, which get on food by coughing and sneezing. Prevent the contamination of food in this way by covering your coughs and sneezes with a handkerchief.

c. Diseases carried by insects and animals (Ex. dysentery, food poisoning). The staphylococus bacteria which causes one kind of food poisoning come from boils, infected cuts and hang nails. If these germs get into food and are allowed to grow for a few hours, they produce a poison that makes people plenty sick. A gauze bandage is not sufficient to keep these germs out of food. Remember that we said these germs are very small. They can pass through a gauze bandage, without much trouble, so if you have an infection on your hands or body, where there is danger of these germs getting into food, don't handle food because you may spread food poisoning.

You have a definite responsibility in doing your part to keep down the spread of contagious diseases. There are many sanitary practices and precautions that you need to observe to break the channel of infection. These will be discussed next week when the second lesson of the series will be in session.

IV. Demonstration:

Since some of you may never have had the opportunity to see or study

bacteria, we want to back up our statements by proving to you that germs do exist and that they are everywhere. Here we have some sterile petri dishes containing sterile agar, a food on which bacteria are grown. We want to contaminate these petri dishes with a hair from someone's head, a finger drawn lightly on the surface of the agar, a good hefty cough, a coin, and some dust from the floor. The petri dishes will be returned to the classes next week so you can see the results then.

V. Filmstrip—USPHS "Our Health in Your Hands" No. 1 (Germs Take Pot Luck)

This filmstrip "Germs Take Pot Luck" will give you more information on germs and communicable diseases.

VI. Sound Film—"Defense Against Invasion"

During the showing of this Walt Disney production in color you will see how the body builds up immunity to disease and how vaccination protects you.

VII. Questionnaire:

We have a very simple true and false test that we want to give you. Don't get excited, because this is not to test you anymore than it is us; we want to know if we made the points clear. In addition to the questionnaire on the clip board, you will find some literature on proper foodhandling. Be sure to read all the literature, because it contains some good information. As we read the true-false statements, write your answer in the blank space.

VIII. We want to say again that we appreciate your attendance and your attentiveness throughout this first lesson, and we want to urge each and everyone of you to attend the second lesson which will be conducted at this same time next week.

Lesson No. 2: Good Housekeeping Policies and Personal Hygiene

I. Sound film on rats "Keep Them Out."

The first thing on our program today is a sound film on the rat. We believe that all of you will realize when you have seen this film that rats as well as flies can and do carry disease producing germs. It will also be noticed that:

a. rats are very prolific.

b. rats destroy enormous amounts of property, as well as carry many diseases that are transmitted to man.

c. rats can be controlled by:

1. Ratproofing—build them out.

2. Destroying their nesting and hiding places.

3. Keeping food supplies away from them—protect garbage.

4. Catching and killing.

II. Illustrated Lecture—Good Housekeeping and Personal Hygiene

a. Introduction:

You have already learned that certain diseases are caused by bacteria or germs and that you as foodhandlers have a definite responsibility in helping to keep down the spread of communicable diseases by blocking or cutting the channel of infection.

b. There are numerous things that you can do to block this channel:

1. Garbage and refuse disposal.

a. Every municipality should provide a satisfactory method of garbage collection and disposal for its citizens. After garbage is collected by means of a sanitary type truck, it should be disposed of by burning or incineration, or by a sanitary land fill, and not dumped on a hillside or in a gully to encourage rat harborage and fly breeding.

b. Although the city may collect and dispose of garbage in a sanitary manner, this is only half the story. Garbage thrown carelessly about food establishment premises, and left exposed encourages the presence of vermin such as flies, rats and roaches. It furnishes them with breeding places and provides them with a food supply. Flies, rats and roaches are dangerous and expensive pests. Therefore, each of you should do your best to eliminate them. The attack can be made on three fronts:

1. Eliminate their breeding places.

2. Cut off their food supply.

3. Poison and trap.

c. Garbage protected in a clean can with a tight fitting lid facilitates collection and helps to eliminate dangerous vermin. Remember, that it is just as important to keep your garbage containers sanitary as it is other equipment used in the foodhandling industry.

2. Store all food so it is protected from contamination.

a. Pies, doughnuts and other foods should not be placed on open counter where they are exposed to all types of contamination. The customer can contaminate them by coughing, sneezing, and fingering over them. There is no reason for a customer to ever contaminate food if you foodhandlers would do your part.

b. Open sugar bowls encourage the presence of flies. The fly is not satisfied by simply walking across your food, but it eats some of it, and contaminates much more than it eats. Then, too, your customer may taste his coffee, realizing he hasn't sweetened it and after contaminating his spoon by putting it into his mouth, he dips it into the open sugar bowl and passes his germs on to someone else. Use the closed sugar bowl which prohibits the customers spoon being dipped into it and which protects the sugar from dust and insects.

c. All other foods must be stored so as to be protected from all sources of contamination. Be sure to cover left over foods immediately after serving time is over, and refrigerate perishable foods.

d. Store dried beans, sugar, meal and flour so they are protected from dirt, rats and mice—preferably in metal or glass containers with tight lids. All items of storage should be on shelves or racks at least 12" above the floor.

3. Handling of food — while having lunch in a restaurant, I saw a waitress open the refrigerator and pick up butter with her fingers. I thought she was new at the business, and that the manager would soon have that insanitary practice corrected, but I saw six other waitresses do the same thing. This manager was more interested in the cash register than he was seeing to it that his customers got "safe service." A good rule to follow is: Don't handle any food with your fingers unless it is absolutely necessary. Sometimes it is necessary to handle certain foods such as lettuce and tomatoes, but before handling them, wash your hands thoroughly with plenty of warm water and soap. A nation is eating out of your hands and dishes—make sure they are clean.

4. Construction and cleanliness of equipment.

a. All equipment should be constructed so it will be easy to clean and free from any cracks, chips and broken places.

b. Meat blocks, sandwich boards and food preparation tables with cracks in the surfaces offer excellent places for bacteria to grow. Food particles become lodged in the cracks and all conditions for growth are favorable, namely, food, moisture and a warm temperature.

c. Meat grinders, slicers, and all other equipment used in the preparation of food should be thoroughly cleaned each day. Each item should be taken apart and every part cleaned thoroughly. Do this at the end of each day's operation, because if it is put aside until the following day someone may forget to clean it, as was the case of one food establishment that waited about ten days to clean a meat grinder. Upon inspection the sanitarian found magots working inside it—someone had forgotten to take it apart and clean it.

d. Clean cooking utensils both inside and outside thoroughly each day, and do not use chipped enamel in the preparation of food.

5. Dish washing — we now come to one of the most important jobs in the foodhandling business.

a. Mechanical dishwashing. If dishwashing is done with a dishwashing machine, be sure to:

1. Scrape dishes well.
2. Pre-rinse.
3. Arrange properly in dish rack and place into machine.
4. Turn on 130 -140° F. wash water, containing effective detergent, for one minute.
5. Turn off the wash and turn on the 170 -180° F. rinse water for one-half minute.
6. Place racks of dishes on drain board and allow to dry.
7. When the dishes are done, take out, empty, and clean the scrap trays. Clean washer arms, jets, spray nozzles and the inside of the machine thoroughly. A good detergent should be added frequently during operation. To maintain water at the desired temperature a booster burner should be placed under the vat, and a thermometer should be a part of the dishwashing machine.

b. Handwashing of dishes—an adequate three compartment sink and plenty of hot water is necessary for washing dishes by hand.

1. Scrape the dishes well and stack plates with plates, cups with cups, etc. Don't try to wash them all scrambled together. If the dishes are arranged in a systematic order it will reduce breakage as well as facilitate the operation.

2. Wash the dishes thoroughly with a brush in vat No. 1 which contains water at a temperature of about 120° F. Too many dishwashers make the mistake of trying to wash dishes in water that is not hot enough. The temperature must be above the melting point of fats, if a good job of dishwashing is accomplished. In addition to the hot water a good dishwashing compound should be used—not a soap powder. Soap leaves a greasy film that will not readily rinse off.

3. When the dishes have been thoroughly washed, place them in a long handle immersion basket in the second vat, where they will be thoroughly rinsed in warm water.

4. Then move the basket of dishes to vat No. 3 where the sterilization process takes place. There are two methods of sterilizing dishes—(1) hot water and (2) chemicals.

a. Hot water—if hot water sterilization is used, the temperature should be at least 170° F. and the dishes allowed to remain in the hot water for at least two minutes. To maintain water at this temperature, it is necessary to have a booster heater under the vat. A thermometer is also essential to make sure the heater is keeping the temperature at or above 170° F.

b. Chemical sterilization — of the chemicals used for sterilization, chlorine is the most common. Allow the dishes to remain at least two minutes in a 100 PPM chlorine solution.

5. Remove the dishes from the sterilizing vat, place on drain board and allow to dry.

6. Store the dishes so as to be protected from contamination. Store dishes in tight cabinets, and glasses and cups "bottoms up" in wire storage racks. Silver should be so arranged that only the handle is grasped when it is removed for service.

7. Handle clean dishes and utensils carefully.

a. Keep fingers out of clean bowls, cups and glasses, fingers may transfer germs.

b. Keep fingers off the eating surface of any utensil. Touch only the bottoms and edges of dishes and plates with the fingers.

c. The bowls of spoons, the tines of forks, and the blades of knives are for food, take them by the handle.

6. Personal hygiene—personal cleanliness is fundamental. Each and every one of you should obey the rules of good health.

A neat, clean waiter or waitress is an asset to the food handling business.

A neat and courteous waitress whets the appetite, but a dirty, slouchy, discourteous waitress can ruin an appetite very quickly. A waitress should be neat, clean and should have a pleasant manner.

III. Film Strips—"Our Health in Your Hands"—More information on personal hygiene and dish washing will now be presented by the use of two USPHS film strips, No. 2 and 3, "Service With a Smile" and "In Hot Water."

IV. "The Danger Point" — This color film will explain exactly how diseases can be spread in foodhandling establishments by improperly sanitized dishes and glasses.

V. Demonstration — At this time we want to explain how we take the bacteria count on glasses and other eating utensils. In this bottle is a sterile swab in sterile water; the swab when rubbed over the surface to be examined may pick up any germs which might be there. The germs are taken to the laboratory, plated out, incubated at body temperature for 48 hours and then counted. If each utensil contains over 100 germs sanitation is unsatisfactory.

Here are the petri dishes that you contaminated last week, and we believe that after you see them you can better understand why it is necessary to wear a hair net or cap to keep hair out of food, wash your hands often, cover your coughs and sneezes with a handkerchief, and sweep floors by dustless methods.

VI. Questionnaire: In addition to the true and false test on this clip board, you will find some more literature on food sanitation.

The last lesson in this course of instruction will be conducted at this same time next week, and we hope to see each of you here at that time. Each foodhandler who completes the entire course will receive a "Certificate of Merit."

Lesson No. 3: Nutrition, Food Poisoning and Prevention of Food Contamination

I. Sound Film—"Something You Didn't Eat." This film shows us the importance of eating a variety of foods for good health. Our bodies are made of many materials which must be replenished from the food we eat. We must have foods that give energy, foods that supply materials for growth and upkeep, and foods to keep our bodies in good running order.

II. Lecture of Food Poisoning and Prevention of Food Contamination.

A. Food Poisoning—probably each of us at sometime in our life has experienced a gastro-intestinal upset in which stomach cramps, vomiting and diarrhea, lasting for several hours, occurred. Usually the recovery is within several days, but sometimes the attack is fatal. Illness of this kind may be the result of food poisoning. Foor poisoning occurs in three different ways.

1. Food infection—that is food that contains certain bacteria which when eaten grow and multiply in the human body, causing disease. Ex. Typhoid Fever.

2. Chemical poison—Food that contain poisonous chemicals. Store all poisons away from food supplies, so they will not be mistaken for food ingredients. Sometime ago 236 people became seriously ill shortly after eating in a restaurant on the West Coast. Upon investigation it was found that a foodhandler had mistaken sodium fluoride roach powder for powdered milk and used it in preparing scrambled eggs. Two-hundred-thirty-six people became sick and forty-seven died as a result of careless handling of poison!

Use only colored insect powders that can be distinguished from flour, baking powder and other food ingredients.

3. Food intoxication—Foods that contain bacteria which grow and multiply in the food and produce toxins (poisons) which cause illness when eaten. Ex. Botulism.

In the foodhandling business we are very much concerned with the type food poisoning that is caused by staphyloccus bacteria. Boils and sores containing pus are alive with bacteria which multiply like wildfire in such foods as salad dressing, cream and meringue, eclaire, cream puffs, etc. If you have an infection on any part of your body, don't handle food.

Only a few years ago about 250 soldiers and sailors became ill shortly after eating breakfast in a large dining hall. Public health officials were contacted and asked to try to find the cause. After an official spent almost two days combing the place thoroughly the origin of the outbreak of food poisoning was traced to the milk pump, which had not been cleaned properly. Some of the material from the pump was forwarded to the laboratory where it was found to be thriving with "staphs." The manager was asked who was responsible for cleaning the pump, and it was learned that even the manager didn't know how to take the pump apart, although it had been in use for two or three months.

If someone had done a simple thing, that is learn to clean the milk pump and keep it clean one soldier who died, might be living today. He died for the simple reason that he got the first milk from the pump that morning and he had two glasses, because his buddy didin't want his and gave it to him.

You may say "That won't happen to me or in my place of business; things like that always happen in some other town or some other state." Let's hope it won't happen to you, but there are similar experiences practically every day somewhere in the United States. It won't happen to you, or in your town if all sanitary precautions are taken and regulations are followed carefully.

B. Prevention of Food Contamination. The introduction of the harmful bacteria which cause food poisoning and those which cause epidemics occur in practically the same manner. Some of the ways in which contamination of food may be prevented are:

1. Properly washed vegetables.

2. Examination of foodhandlers to make sure they are not carriers of disease.

3. Proper washing of the hands after visiting the toilet is absoutely essential.

4. Protection of foods from rats, flies, and roaches.

5. Workers free of sores, boils, and similar infections.

6. Food protected from contamination by customer.

7. Precautions taken in the dispensing of waiter or waitresses.

8. Proper use of side towel.

9. Clean preparation tables.

10. Proper installation and care of refrigerator.

11. Protection against contamination of food by sewage.

12. Protection against contamination of drinking water.

13. Use of inspected meats.

14. Adequate cooking of foods.

15. Use of pasteurized milk.

16. Proper storage and dispensing of milk and other bottled drinks.

17. Proper handling of pies and other pasteries with cream filling.

18. Proper handling of commercially prepared sandwiches.

19. Proper handling and use of cracked ice.

20. Use of certified oysters.

People have died because they ate and drank heartily, trusting in those who prepared and served the food. And people will continue to sicken and die because they eat out, unless you protect them. The food you prepare for your customers must first of all be clean, wholesome, free from spoilage and safe for human consumption. If you have any doubt, don't take a chance. Remember, lives are at stake.

IV. Film Strips, USPHS Series No. 4 "Safe Food for Good Health". This film stresses the importance of buying only safe foods, refrigerating perishable foods properly, preparing and cooking foods thoroughly, and serving them carefully.

V. Film "Eating Out. "Eating Out is a silent picture which points out numerous violations of food sanitation in the restaurant business, then shows the correct procedures. It is somewhat a review of the things that have been presented in this series of classes.

VI. Questionnaires — This questionnaire is similar to the ones you have already completed. There is also more literature on the clip board for you to take and read. The floor is open for questions and discussions.

The health department wishes to thank you again for your excellent cooperation in making this food conference a success. It is hoped that all of you gained some helpful information here, and that you will go back to your respective places of business and put it into practice.

At this time we would like to flash the National Anthem on the screen. Let us stand and join in singing.

Make up classes were arranged to enable the foodhandlers, who had missed one or more of the conference sessions, to qualify for their certificates. A number of recently employed foodhandlers attended all these classes and obtained certificates since the subject matter presented and length of periods were the same as arranged for the first series.

Certificates were awarded to foodhandlers who attended all the three lessons. Appropriate placards of recognition were given to establishments having 100% of their personnel receiving certificates.

A short condensed course is now being planned for all foodhandlers who have not had previous training. This will enable new foodhandlers to get some training immediately before or after beginning work. All foodhandlers applying for the required health certiciates will be encouraged to attend this course. It will consist of discussions centering around the four filmstrips in the United States Health Food Handling Series and will be a regular weekly service of the health department.

The health department plans to make the Foodhandlers Conference an annual event presenting the same basic fundamentals with new materials. A paramount objective in designing the next conference will be to stimulate more group discussion.

Any evaluation if the conference must take into consideration both immediate and long term benefits. The number of establishments represented and the number of foodhandlers attending the conference indicates that cooperative working relationships of foodhandling establishments have been strengthened. Some of the actual carry over value of the information can be measured in the future ratings of the establishments as they are determined by sanitary inspections.

The following editorial and statements given volnutarily by foodhandling establishment managers give some indication as to the value of the conference.

EDITORIAL

"The Record congratulates Sanitarians T. J. Sharpe and Julian R. Taylor of the Catawba County Health Department, on the excellent start they have made in raising the sanitary standards of eating places throughout the county. We urge the general public to take cognizance of what has been done, and cooperate in every way possible toward making the program more and more effective.

One way we can help, is by giving our business to the cafes and restaurants that display the certificates which the Health Department is distributing to those eating places having one hundrer per cent if their personnel trained in sanitary methods of food preparation and service. This certificates carries the heading "For Your Health Protection," and if properly displayed should be easily seen by the customer.

We commend the cafe and restaurant operators who have been sufficiently concerned over the health of their customers to see that all of their employees are properly trained in sanitary practices. Those who patronize only such eating places as have a good rating and whose employees are trained to safeguard health, will not only demonstrate their appreciation but will also

give added impetus to the Health Department's program."

Volunteer remarks of restaurant managers:

"I have observed a definite improvement in the work of cafeteria personnel since attending the course. I would like to attend the school myself."

"Personally, the food classes were a great help to me and to all my help. I am proud to say that all my help attended each lesson, and I didn't have to force or pay them to go."

"The best thing the health department has done for cafes."

The following tabulation gives a comprehensive picture of the enrollment, attendance, and representation. Percentages have been computed to show the scope of participation on the part of management and employees. It should be noted that only the establishments who had 100% personnel representation at all three classes received the special award.

EQUIPMENT NECESSARY

Room. — The meeting room should be at least 20 x 30 feet in size, conveniently located, and should present a desirable environment relative to lighting and ventilation. If the meetings are to be held during the day, it will be necessary to darken the room.

Suggested meeting places:

1. Health Department Building.
2. City Hall.
3. Civic Clubs or Union Halls .
4. Community Buildings.
5. Court House.
6. Schools.
7. Churches.
8. Theaters.

Equipment needed:

1. Adequate seats.
2. Outlets for electrical equipment.
3. Two tables for movie projector, slides and filmstrip projector.
5. Slide and filmstrip projector.
6. Screen.
7. Clipboard and pencil for each person in attendance. (Clipboards may be made inexpensively from masonite).
8. Transparent 2 x 2 slides.
9. 16 mm. films and 35 mm. filmstrips.
   a. Swat the Fly
   b. Defense Against Invasion (color).
   c. Keep Them Out.
   d. The Danger Point. (color)
   e. Something You Didn't Eat. (color)
   f. Eating Out. (silent)
   g. USPHS filmstrip series "Our Health in Your Hands."
10. Literature and questions for foodhandlers.
    a. Foodhandlers' Manual.
    b. Take a Tip.
    c. Safety Suggestions for Foodhandlers.
    d. Health Hints for Proprietors.
    e. Pamphlets on various diseases.
    f. Questionnaires.
11. Swabs to demonstrate rim count procedure.
12. Petri dishes to demonstrate bacterial growth.

Department	Establishment					Employees				
	No.	No. Represented	% Represented	No. Receiving Awards	% Receiving Awards	Potential No.	No. Enrolled	% Enrolled	No. Certificates	% Certificates Receiving
Hickory	54	52	96%	22	42%	280	271	97%	201	72%
Newton	33	30	91%	13	43%	140	132	94%	99	75%
Lincolnton	23	23	100%	2	*8%	69	59	85%	30	51%
Total	110	105		37		489	462		330	

*Make-up classes not held in Lincolnton

Typhoid In January

By MRS. LOUISE P. EAST, R.N., Consultant
District No. 5, Asheville, N. C.

A Mother lies ill in a Western North Carolina hospital—diagnosis: Typhoid Fever.

The case came to our attention January 21, 1947, through the interest of a Health Officer in an adjoining area.

As always, a case of Typhoid Fever calls for investigation to determine through what source the deadly germs were transmitted to the patient. In downstate sections of North Carolina suspicious vectors would be shell fish, water, milk and food eaten at unaccustome places, within the incubation period of the disease. In the high altitude from whence this patient came, in Madison County, some of these usually suspected sources were eliminated because of the isolated area in which the stricken woman lives.

Armed with Typhoid vaccine, sterilized bottles for water samples and confidence that no mountain home was too remote for a Public Health worker to reach, I hopefully set out on the quest of uncovering the source of the Typhoid germs.

I wish that I had been supplied with a kodak so that I could send a picture to go along with the article showing the fringe and network of ice which transformed the rocky walls bordering the highway between Asheville and Marshall into a picture of exquisite beauty. In such a setting Typhoid seems definitely misplaced to those of us who knew Typhoid intimately years ago.

In looking back over the experience of the afternoon thus spent, the lines of a poem by Robert Burns keeps coming to mind about:—"The best laid plans of mice and men".

Upon arrival at the office of the physician of the family involved, we contacted Dr. Saams, who serves the county in regard to matters which affect the health of the public, since there is no health department in Madison County.

The family physician was already on the alert and had begun administering Typhoid vaccine to members of the family.

Water supply: Could any water supply be purer than that which falls from rocky ledges so high that there is no human habitation about it?

Milk supply: The family owns their own cow, do their own milking. Typhoid germs do not come from cows, nor from milk unless the water supply is contaminated or there is a Typhoid carrier around!

Being eager to reach the home, I began asking for directions. Both physicians advised against it. One said, "Why I would not go up there this afternoon for a thousand dollars".

Clouds hung low and dark, it was bitter cold. The other physician said, "When I get a call to that family, I ask the man to meet me at the highway with a horse so that I can ride the mile and a half up the cove to his home".

About that time snow began falling, not straight down, for the wind was high and the flakes were blown straight across the sky in such a winterish fashion that all living creatures were prompted to seek the shelter of home and warmth.

As I was leaving the office I had a feeling that Robert Burns must have known what he was talking about in that poem. We checked over the information gained and plans made. Said the family physician: "The husband of the patient refused to take Typhoid Vaccine because, 'as he said, 'I had Typhoid Fever a few years ago".

Gang way, Robert Burns!

Typhoid carrier? Milk? Water?

Tomorrow is another day.

On horseback or on foot, a Public Health visitor may yet uncover the source of the misplaced Typhoid germs.

The North Carolina League for Cripple Children

DATE AND PROGRAM

For the 12th year the North Carolina League for Crippled Children invites its friends to share in financing its work during the Annual Easter Seal Campaign, March 6th through Easter, April 6th. During the past year the generous contributions of the public made it possible to expand considerably the program of the League.

The League is a private social agency that cooperates with, but does not duplicate the work of other public and private charitable organizations. Aids the crippled whether the condition resulted from accident, birth, disease or infection. Its only requirement for aid —a valid need not otherwise provided for. Its main source of funds—voluntary contributions during the Annual Easter Seal campaigns.

The consistent growth of the league during the past years reflects both the fundamental need for such an agency and the increase of public confidence in its program. Your contribution at this time will improve the lot of one or more crippled children. For whatever your heart prompts you to give, the children say, "Thank you, and a Happy Easter."

Among the services rendered by the League during 1946 were:

1. **Medical Care:** Specialized care to insure the best physical correction included orthopedic operations, orthodenture treatments, blood transfusions, insulin, clinical treatments, hospitalization, convalescent home care, and physicians' visits to homes.

2. **Artificial Aids:** Artificial limbs, extension shoes, crutches, wheel chairs, glasses, hearing aids, and plastic ears were provided.

3. **Transportation:** Miles traveled to clinics, hospitals, and schools, amounted to more than three times the distance around the world.

4. **Education:**

a. Special training classes at the University of North Carolina for teachers interested in working with handicapped pupils.

b. Scholarships for taking this specialized training were provided for 12 teachers and 2 school nurses, and tuition was made available to 3 other professional workers.

c. A summer educational center for handicapped children.

d. A two day Special Education Institute for school executives.

e. A speech correction program in one city school.

f. Three teachers trained to work with exceptional children are assisting with the work of the Child Guidance Clinic in one city.

g. Bedside teaching in 2 hospitals in one city.

MARY ETHEL JACOCKS, age 2, daughter of Mr. and Mrs. Frank Jacocks of Charlotte, N. C. Mr. Jacocks is Director of Sanitation for the City of Charlotte.

The Health Bulletin

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Vol. 62 APRIL, 1947 No. 4

A Public Health Nurse On Duty

CONTENTS

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CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Public Health Nursing Week

By Amy Louise Fisher, R.N.
Supervising Public Health Nurse
State Board of Health

The week of April 20-26 has been designated as Public Health Nursing Week for 1947. It will also mark the 70th anniversary of public health nursing in the United States. The whole nation will pay tribute to the blue-clad nurses who work so tirelessly in homes, clinics and schools to help keep the scourge of sickness and epidemic out of our homes and communities and promote better health.

Miss Ruth Weaver Hubbard, President of the National Organization for Public Health Nursing, has said, "Public Health Nursing Week will give us the opportunity to work together for national health. We are not nurses working alone. We are lay and professional people working with other citizens toward a jointly accepted goal. But just as all must work to provide the quality and quantity of public health nursing service this nation needs, so all must join to interpret that service broadly until there remains no person ignorant of its offerings to his neighbor and himself.

Public health nursing is an integral part of a national health program for every individual in these United States.

The growing army of public health nurses is still far too small for the demands made upon it by the national health program. There are still places where the services of public health nurses are not available in any form to American families. The public health nurse of the future is yet to be recruited from the young womanhood of today and tomorrow."

North Carolina is fortunate in having 93 of the 100 counties organized for public health work, other counties will probably organize during this year. The need for more public health nurses is nationwide and is urgent. Sixty six positions out of three hundred and sixty (360) budgeted positions for public health nurses in North Carolina are vacant. The State Board of Health offers scholarships to **help nurses qualify** for post graduate study in this field.

Public health nursing offers a long-term career in a socially useful activity in which there are many personal satisfactions. It offers many opportunities for service and requires your best efforts.

The following articles in this Public Health Nursing issue of the Health Bulletin will serve to focus attention on the scope and type of public health nursing service now being carried on in North Carolina.

"Public Health Nursing Week"

BY THOMAS PARRAN, M.D.

Surgeon General, U. S. Public Health Service

"Public Health Nursing Week" is America's appropriate tribute to a group of workers dedicated to protecting and improving the country's health. Since the 1870's the public health nurse has contributed continuously to the well-being of our people and to the success of this country's entire public health program.

The work of the public health nurse long has been recognized as the backbone of the local health program. Today's emphasis on preventive medicine places an even higher premium on the nurse's services. She plays an important part in the control of epidemics, the early detection of remedial defects, the prevention of disease, and the adoption of good health habits.

No local health program can meet its goal without adequate public health nursing services. These services are available to everyone regardless of economic status. But in addition to the percentage of the population of a community benefiting directly from the efforts of the public health nurse, life for all in the locality is healthier, more secure, and happier because of her work. In these days of inadequate hospital facilities, the public health nurse plays a particularly vital role in keeping the nation fit.

As scientific horizons continue to broaden, we must bring medical triumphs from the research laboratory into the homes, shops, factories, and farms of the United States. The public health nurse is indispensable in her role as interpreter of scientific advances in medicine. In her direct dealings with the people of a community, she has the opportunity to explain new drugs and treatments and to encourage their use. Working with specialists in such fields as tuberculosis, orthopedics, pediactrics, obstetrics, and psychiatry, she has unlimited opportunity to strive constantly for the better health of all people.

Today, more than 20,000 public health nurses are employed in national, Federal, State, and local agencies — in health departments, boards of education, visiting nurse associations, insurance companies, and schools of nursing. Many more are needed, however, if we are to reach the ratio of one public health nurse for each 2,000 of our population—the ration recommended whereever bedside nursing is included in the community health program. We need more than three times the present number to reach that goal. Some 1100 counties in the United States still are entirely without public health nursing services; few other areas are adequately staffed.

Public health nursing is a deeply rewarding career. Activities are stimulating and varied, all offering the opportunity to contribute to the nation's health and security. At present there are hundreds of openings for public health nurse recruits.

I am confident that a public which is aware of the benefits offered through public health nursing will take advantage of the services where they exist, support them fully where they require expansion, and cooperate in bringing them to areas where they are now unavailable. During "Public Health Nursing Week" many persons will have the opportunity to learn the value of public health nursing.

Annual Report of Charlotte Public Health Nursing Service 1946

BY ANN C. BARENTINE, R.N.
Director, Public Health Nursing Department

The Health Department Nursing Service, aware of the marvelous development of scientific research which characterizes this period of this world's history, has endeavored throughout 1946 to meet this challenge of enlightenment by sounding out new means and methods ,adopting them quickly and spontaneously where proven superior, and discarding as soon as practicable the outmoded and stereotyped, no matter how time-honored. This resolute adoption of the best thought available, and the earnest desire to advance with the times have made the preceding months a day by day march of progress towards the ultimate achievement of improved mental, physical, and moral health for the citizens of the city of Charlotte.

This has meant experimentation, intensified effort, and determined growth as well as honest appraisal, self-analysis, and a willingness on the part of the entire staff to surrender personal differences, and to lose all restricted habits of thought relative to techniques and procedures in a larger conception of service, as evidenced by an enthusiastic and comprehensive welcome of the new and promising.

The generalized program of the Nursing Service has been carried out by the nineteen nurses—thirteen white and six colored—which comprise the staff. Its activities, extended throughout the nineteen districts it serves, include: bedside nursing, new-born care, infant, pre-school, and adult health supervision, school nursing, ante-partum, post-partum, morbidity, and crippled children, tuberculosis, communicable and venereal disease control. In addition to work in the various districts, the nursing staff, through systematic rotation, has continued to serve in the Immunization, Maternity, Planned Parenthood, Orthopedic, Tuberculosis, Venereal Disease, Medical clinics and in the Child Health Stations.

In the furtherance of advanced technical knowledge in Public Health Nursing and Special Education for handicapped children, six (6) scholarships were made available through the North Carolina State Board of Health, the G.I. Bill of Rights, and the North Carolina League for Crippled Children. The Local Chapter of the American Red Cross sponsored two six-day training courses through which eight (8) members of the staff were instructed in, and now teach, home nursing classes.

In-service training, designed to develop latent resources in the staff without interruption of performance in the field, provided for enlargement of individual capacity through institutes, courses, and staff conferences. Of particular and far-reaching value were: a two (2) day institute and a twelve hour refresher course on Nutrition, conducted by Miss Willidell Schawe, Nutritionist, Metropolitan Life Insurance Company, and Miss Eunice Outlaw, Nutritionist, with the North Carolina School Health Coordinating Service; an institute in Nursing Aspects of Tuberculosis Control, conducted by Mrs. Louise Lincoln Cady, Nursing Consultant, National Tuberculosis Association, and Dr. Hillis Seay, Superintendent of the Mecklenburg County Tuberculosis Sanatorium; and an institute on Social and Health Concepts of Nursing in the Basic Curriculum, conducted by Miss Mary J. Dunn, Senior Nurse Officer, United States Public Health Service.

The discussions at the institute were the determining factor in the adoption,

by the Superintendent of the Hospital and the Health Department Officials, of the present advanced procedure which affords the nearest approach to perfect integration of social and health aspects of nursing in the basic curriculum of local hospital training school. This marks a definite improvement in this direction inasmuch as it is now possible for all students in these schools to obtain two (2) weeks' training and observation in the Public Health Department, whereas formerly this opportunity was available to only a limited number.

Definite response on the part of the public to group teaching by public health nurses has been reflected by visible improvement throughout the year. This teaching in the form of lectures, classes, and demonstrations, covered a variety of subject matter, including: Community Health and Social Resources; Health talks to Parent Teacher Associations; Radio talks on Health Education and Activities of the local Health Department; Vocational Guidance to High School students; Red Cross Home Nursing Classes; movies and talks on Venereal Diseases and Tuberculosis; Nutrition classes; Prenatal and Practical Nursing classes; Personal Hygiene; Marriage counseling and Planned Families.

During 1946 approximately one hundred (100) student nurses, enrolled in the training courses of the local hospitals, were given the privilege of acquainting themselves with the activities, aims, purposes, and functions of the Public Health Nursing Service.

Through the Student's Affiliate Program maintained through joint participation of the Nursing Service and Mercy, Presbyterian, and Good Samaritan Hospitals, eleven (11) affiliates from these hospitals were given two full months' training in Public Health Nursing.

Approved in 1945 by the University of North Carolina of Public Health as a Field Training Center, four (4) associate nurses were accepted for eleven weeks' training in the field. In addition to guidance step by step in learning actual public health work, demonstrations in office and clinics, and field work, especial attention was given to the elimination of individual defects or weaknesses in particular phases of the work, and the broadening and strengthening of special branches of the service in which the associate anticipated a need when assigned to her permanent position after completion of her training.

Recognizing the importance of prenatal instruction, the Nursing Service intensified its efforts to bring more cases under its supervision. Only one hundred and twenty-five babies, out of the total four thousand seven hundred and twenty-nine born during 1946, were delivered in the home. Nine hundred thirty-six of the total deliveries were given post-partum care by public health nurses.

Through proper hospitalization, the propagation of health knowledge, and better medical and nursing care, the maternal deaths decreased from eight (8) in 1945 to three (3) in 1946.

Alarmed in 1945 to discover, from an appraisal made by the American Public Health Association, that Charlotte had one of the highest infant mortality death rates from diarrhea and enteritis in the nation (of the cities reporting) a concerted effort on the part of the entire Health Department to improve this situation was begun, and continued throughout the year. Dr. Bethel, in this connection, called a meeting of all the pediatricians in Charlotte, reviewed the deaths, discussed possible causes, and inaugurated a procedure which has been faithfully followed with the gratifying result that not a single death from this cause has been reported this year.

With the assistance and cooperation of the School Health Coordinating Service, principals, teachers, and school authorities, the nurses have continued their work in the School Health Program. Individual and group confer-

ences on health problems have proven very beneficial. The nurses have assisted the teachers with the screening (health appraisal) of the students and referred for medical care cases where the need was indicated. In instances where defects were observed, follow-up visits by the nurses were continued until corrections were effected whenever possible. All First Grade and Seventh Grade and Selected students were given a medical examination by Dr. Maude Pressley.

The Sunshine Projects operated at First Ward and Bethune Schools jointly by the Charity League, the Board of Education, and the Health Department have shown no diminution of interest or enthusiasm in their unselfish endeavor to correct defects and deficiencies among school children, and the far reaching result of their efforts are of immeasurable worth to the community, fortunate indeed to bear the imprint of their vision in this direction. Considering each extension of service, a slight but cherished mark of progress, the Nursing Service reports the addition of another Child Health Station, bringing the total number maintained to nine (9), located in readily accessible localities throughout the city.

Outstanding progress has been made in the detection and control of Venereal Disease, as revealed by reports from the Venereal Disease Clinic.

Although Tuberculosis is the ninth leading cause of death in Charlotte, the danger has been checked to the extent that the death rate is steadily declining. With further progress in the total eradication of this disease as its goal, the Nursing Service has worked closely with Dr. Hillis Seay and his staff at the Mecklenburg County Sanatorium, and Miss Ruth Harris, Executive Secretary of the Tuberculosis Association, and her staff to locate cases, bring them under treatment, and have examinations made of contacts. An educational program designed to acquaint the public with the danger of tuberculosis, its prevention, treatment, and ultimate eradication is constantly in process through the mediums of newspaper, radio, literature and posters, mass X-Rays, movies and lectures, and oral instruction by doctors and nurses. Follow-up visits are made to all newly diagnosed cases in addition to cases dismissed from sanatoriums, Veterans Hospitals, or referred by agencies and physicians.

The Nursing Service gratefully accepted the opportunity afforded the director to attend the convention of the American Public Health Association in Cleveland, Ohio, and the Biennial Nurses' Convention in Atlantic City, New Jersey.

This report, while indicative of the progress that has been made during the year, to the Director, seems but the promise of a new era of service made possible for the future by the newly awakened health and social consciousness now prevalent throughout the nation. She feels that, while supported during the preceding months by intelligent and conscientious cooperation from the Nursing Staff, including clinic nurses, the Departmental Secretaries, the Health Officer, other divisions of the Health Department, social, civic, and administrative groups, and the school authorities which have made this progress possible, there predominates in the minds and hearts of all an urgency, an inspiration, to work toward a higher vision of social welfare for Charlotte — one in which the accomplishments of the year that has passed will seem but the shadow and not the substance of our hope.

The Follow Up of the Tuberculous Veteran and His Family

BY JANE M. BROWN, R.N.
Acting Supervisor in the City of Asheville Health Department

For the past year we have had a great many reports sent to our department from the Veterans Hospital at Oteen, N. C. These are reports of veterans with tuberculosis discharged with consent of the medical staff and a goodly number who leave against advice. Patients admitted to the hospital are also reported and we appreciate this service as many of them have not been previously reported. The veterans reported to us are permanent residents of our city and county. Sometimes they give an Asheville address which is not correct and much time is lost before they are located.

These reports usually reach our office about two weeks after discharge of the veteran. When the report is received, a visit is made by the nurse, not only to offer her services if needed, but to assure them that the Health Department stands ready to serve them in every way possible. Sometimes the nurse makes three or four visits before finding the patient or a member of his family. It requires quite a bit of ingenuity on the part of the nurse at times to satisfy the curiosity of the landlady or neighbors in regard to her visits. The veterans from other communities and states giving an Asheville address cause some trouble. Frequently the nurse makes several visits and finally finds someone who tells her that the veteran only stayed one or two days and has gone to Tennessee or elsewhere, address unknown. In some cases he is still in town and is finally located.

If the veteran has been discharged as an arrested case and with consent, he is as a rule very careful about going regularly to the hospital for a checkup or any necessary treatment. He also takes advantage of the opportunity to have his family examined at the clinic held at the Health Department twice each month and conducted by one of the leading tuberculosis specialists of the city. In some cases members of the veteran's family are under the care of their own physician and are being checked regularly. This report is always verified by the nurse and checked occasionally. If they attend the clinic and the fluoroscope shows need of further examination, an appointment is made for them to be x-rayed at the Western N. C. Sanatorium. This costs a very reasonable sum and if the patient is unable to provide transportation this is taken care of by the Health Department or the Buncombe County Tuberculosis Association.

In regard to the matter of re-hospitalization of the veteran AWOL, he has to wait the full ninety days before he may be readmitted to the hospital, unless some acute condition occurs which makes it necessary for him to be admitted at once; or if he is in such a condition that he is a menace to his family, especially if there are young children and living quarters are inadequate. It would be possible to hospitalize the veteran in the Western N. C. Sanatorium if he were a resident of the State for one year. The trouble there would be that the ninety days might be up before a vacancy would occur in the State Sanatorium. It might be possible to have him taken care of in one of the private sanatoriums of the city, but again, there might be a period of waiting. One of our greatest needs at present is a place where Negro veterans may be cared for as we have no sanatorium for the

care of the tuberculous negroes in the city or county. Of course he could be admitted to the State Sanatorium where there is a colored division if he were a resident of the State. However, here again there is delay because of a waiting list. The only thing we can do is to find a private home where there are no children and where someone would be willing to take him in and care for him under the supervision of the nurse from the Health Department.

In making this statement about the Negro veterans, some of them are residents of our town and have been a greater problem that the non-residents. As in the case of Harvey Mooney who left the hospital against advice and came home to his father's house which was small and crowded as there were only four small rooms and the family was composed of five adults in addition to Harvey, a sixteen year old brother and one of his sisters had three children under six years of age. Harvey was not a welcome addition to the household but he flatly refused to go back to the hospital, though he did not give any particular reason for not doing so. The nurse asked him if he would go to the State Sanatorium, Sanatorium, N. C. After she had made several visits he decided to go and fortunately did not have to wait very long before his application was accepted. At first he was quite contented, then he became dissatisfied and unruly, causing so much trouble they had to send him home after he had been there about six weeks. He was very ill when he came home and was quite willing to go back to Oteen where he died a few days later. The members of his family were examined and were found to have no tuberculosis. This family will be followed from six months to a year.

Another negro veteran who had been a model patient just got up and came home without any explanation. In response to a request from the hospital asking that we investigate and discover if possible the reason for his leaving we did so. On the first visit made by the nurse she did not get very far, so she waited a few days and made another visit. She found him looking much better than he did on her first visit and he seemed happy and contented. He said that everyone in the hospital had been good to him but he just wanted to be in his own house and eat his wife's good cooking. Both he and his wife are very cooperative and as there are no children we feel that he will be well taken care of at present. His wife came in for examination and she has no symptoms of tuberculosis. She will come back in six months for another check.

We had one white veteran reported to us several months ago who was very resentful when the nurse contacted him. She had made several visits to his home without finding him. He was working some and he did not wish anyone to know that he had tuberculosis. So he insisted that the doctor at Oteen did not tell him that he had the disease. However, we had the report from Oteen stating that he was an active case with positive sputum. This veteran did not wish the nurse to talk to his wife but she finally did and found that she was very anxious to have him go back to the hospital as he was quite careless around home. The landlady also wanted the family to move. He finally came up to the Health Department and talked to the Health Officer who urged him to go to the hospital for his own good as well as his wife's safety. He felt that we had treated him very badly but when he received the statement from the Health Officer enclosing a copy of the ordinance concerning tuberculosis and the penalty for not observing the law, he began to change his mind. He called the nurse and asked that she help him to get back into the hospital. As it had been over ninety days he was admitted without delay. They had moved before he entered the hospital ,into a better location and nearer his wife's work. She is under the care

of a private physician and is being checked regularly.

The County Health Department has the same problem in regard to veterans in the home. One of the County nurses said they had a twenty-one year old veteran who left Oteen against advice and is in the home of his father. The father is an active case of tuberculosis absent with leave from the Western N. C. Sanatorium. The veteran has been at home several months and flatly refuses to return to the hospital. An older brother died of tuberculosis some months ago and his widow and two children eighteen months and three years of age are living in the same house with the veteran's mother and his fifteen year old sister—seven people living in one small three room house. The ninety days are not quite up, but he says he will not go back to the hospital so he will have to be admitted to the State Sanatorium under legal pressure.

The number of veterans reported to be AWOL is growing smaller each month as their follow-up program advances. There will always be some incorrigibles to give us trouble, but we believe if the plan is given sufficient time there will be a noticeable change.

As I stated earlier in this article, we get these reports very promptly, considering the volume of work in that department; and if a reply is requested, it is attended to at once.

In regard to the work with families of veterans, they are most cooperative and are keenly aware of the necessity for protecting members of the family, particularly young children. The nurse keeps the family under supervision and is ready to help in any way possible. If they are under the care of a private physician she checks occasionally to see that they are keeping their appointments, or if they depend on the Health Department for check-ups, she keeps track of that.

The education of the family in regard to the danger of having an active case of tuberculosis in the home is a duty to be considered. Special instruction is given if there are several young children in the family, so that the danger of contacts is understood. In some cases they are so anxious to have the father or brother as the case may be at home, after a long absence they do not realize how serious the result may be. It is very difficult in some cases to change the idea that tuberculosis is inherited and there is nothing you can do about it. A great many visits are made before they are convinced that it is really contagious and if they are not extremely careful about the disposal of sputum and care of dishes and linen that other cases may develop. It requires all the patience and tact possible on the part of the nurse, and once they are really convinced that she has no personal motive, but a real interest in their welfare, the battle is almost won.

We are able to call on the local Red Cross, the State Vocational Rehabilitation, the Buncombe County Tuberculosis Association, the Veterans Administration, the American Legion and the Woman's Auxiliary of the American Legion. These organizations have been most cooperative at all times and we feel free to call them if we think they can help us in regard to the veterans.

The State Vocational Rehabilitation department has done a great deal for the veterans in fitting them for some work which enables them to be self-supporting. We have the case of a white veteran, an arrested tuberculosis case, who applied to them for training after he had two admissions to Oteen. He was given a battery of aptitude tests and found that he had good mechanical aptitude plus an interest in mechanical things. Through the State Vocational Rehabilitation Division, he was sent to the Spencer Watch School in Spencer, N. C. for a ten months course in watch making and repairing. After putting in several months of training, he returned to Oteen for another short period of hospitalization and check up. He then returned to his home in Spindale and

set up a shop. This was in the early part of 1946. He is not working full time but is averaging from thirty to forty dollars a week, in watch repairing, while he recuperates further. He is able to maintain his family on his present salary which should increase since the average watchmaker today is making from fifty to eighty dollars each week.

Another veteran after leaving Oteen with consent was referred to State Vocational Rehabilitation department. After checking with him thoroughly on his past and securing medical reports on his physical condition, he took aptitude tests and was given a twelve months bookkeeping course at Cecil's Business College. Although his psysical condition was rather poor, he was able to complete this course satisfactorily and has been able to earn a satisfactory living since graduating from the Business College. His wife was working and she appeared reluctant to have an examination but was finally persuaded by the nurse to have an examination and was found to have some questionable tuberculosis trouble. However she is able to continue work under medical supervision.

A forty-four year old veteran who had applied to us was referred to State Vocational Rehabilitation for help in finding satisfactory work. The Rehabilitation service does not usually train men of this age except for short break-in periods. It was found that he had experience in selling and dealing with people. Since he wanted a very light type job, arrangements were made at Harry's Motor Inn for him to take over a parking lot and manage it. This he did and when I last checked on him, he was making thirty dollars per week, was interested in his work and well satisfied. His wife who is a semi-invalid was examined and found to have no tuberculosis trouble.

In March we had a one day institute on Nursing Aspects of Tuberculosis Control conducted by Mrs. Louise Lincoln Cady which has been of great value to the Public Health Nurses. Miss Agnes Allen, chief nurse at the Veterans Hospital, Oteen, N. C. attended the institute with several members of her staff. Miss Allen stated that they hoped to arrange joint staff educational programs and have the public health nurses attend clinical conferences at Oteen. So far that plan has not materialized but we feel that we are welcome to visit the hospital at any time. Their contribution concerning their work at the hospital and their follow-up program was most interesting and fitted in well with the Tuberculosis Control Program in the Asheville Health Department.

No. of patients under supervision ..299
No. of families under supervision ..212
Deaths from Tuberculosis in Asheville:
1943 55
1944 63
1945 46
No. of patients hospitalized yearly 12 to 18
No. discharged against advice, 22 in 1945
Average case load for each nurse ..32.5

No specific changes have been made in our program but more accelerated work has been done on the part of each nurse. Clinic services available include fluoroscopic examinations at the Health Department twice each month by a tuberculosis specialist. Also facilities are available at the Western North Carolina Sanatorium for fluoroscopic examination, and X-ray when indicated. Individual teaching is done by the nurses and physician in charge of the clinic. At present, we have no space where patients may be assembled for group instruction, but we are hoping to have such a space in the not too far distant future.

Public Health Nursing in the City of Greensboro

Interpretation of the 1946 Annual Service Report

BY MRS. WILLIE BERT RAULSTON, SUPERVISOR

The Greensboro Nursing Council is an official and non-official agency with policies set up by professional and lay personnel. The board members are selected from the community and operate with the City Health Department. The staff consists of a supervisor, and assistant supervisor, six white and five colored nurses, and a clerk. All of these nurses have had a special preparation in Public Health Nursing.

The Nursing Service is available to the entire Greensboro area. There is a charge of $1.00 an hour, but this is based on a sliding scale. If the family is not financially able to pay, adjustments are made and the service is rendered just as efficiently. Last year most of our patients paid nothing toward the cost of the nurse's visit. Because of the high percentage of "free" service the Community Chest contributed $10,436.49, and the City of Greensboro furnished office space, lights, water, equipment, and $16,826.94. The Metropolitan Life Insurance Company, being interested in the welfare of the policyholders, paid $1.00 for each visit that was made to those sick. Contributions of money and of clothing have been greatly appreciated. It is through these channels that the Nursing Council has been able to serve the people of Greensboro. Without the cooperation of the present existing community agencies and organizations, it could not function. This interest and close understanding makes our community stronger and gives the people of Greensboro a better community service.

The statistical report gives a detailed analysis of the types of services performed by our public health nurses. Some may still ask "What is Public Health Nursing?" May I quote what Dr. Rolla B. Hill, director of the Public Health Training Station at Jamaica has answered:

"The Public Health Nurse is an essential if not the most essential part of the team of specialists which go to make up the public health department. Included in this team are the public health officer, the epidemiologist, the bacteriologist, the vital statistician, the health educator, tuberculosis and venereal disease specialists, and the sanitary inspectors. All of these workers are important and necessary, but the public health nurse, either alone or in association with the other members of the team, takes part in all aspects of health work. She is the link between other workers and the home and family, carrying out orders, giving advice and assistance in the home, apprizing her co-workers of conditions to be remedied, and in general carrying the message of health down to the ultimate unit, the individual."

For twenty-one years the Greensboro Public Health Nurses have been carrying the message of health to its ultimate unit, the individual. During these years there has been a pronounced change in the prevalence of disease in the community. Many of the acute communicable diseases which were formerly among the leading causes of sickness and death are unknown or almost unknown. This change is reflected in the type of nursing service. In 1925 6,742 visits were made by public health nurses to the homes for the purpose of control of communicable diseases. In 1945 only 384 such visits were made.

Another impressive change is seen when the maternal and infant death rates for 1925 and 1946 are compared.

In 1925 the maternal death rate was 13.5 per 1,000 live births—infant deaths 92.2 per 1,000 live births. For 1946 the maternal death rate is 3.0 per 1,000 live births, and the infant death rate is 40.5 per 1,000 live births. These are higher for Greensboro than for the county as a whole and there is a need for improvement in the maternity and infancy programs, but in comparison to rates in 1925 there has been a tremendous improvement.

One of the most important duties of the public health nurse is to assist in the detection and control of tuberculosis. One thousand nine hundred and five visits were made to cases and contacts for this purpose.

During the twenty-one years in which the Nursing Council in its present form has been in operation the death rate from tuberculosis has declined from 96.6 per 100,000 to 25.5 per 100,000, an improvement of 73.5%. The distinction in which urban rates are usually significantly worse than rural rates has been eliminated.

Of the new cases of tuberculosis 32% were primary active or in the minimal stage when the chance of cure is greatest and the time required is least.

Another favorable point is that all of the persons dying from tuberculosis had been reported as cases before death.

To all community forces the physician, hospitals, dentists and many welfare and civic organizations, as well as to the public health nurse goes the credit for the improvement in the facts just studied. But let us not become too complacent for there are still many needs to be met. There must be a more adequate program for the care of the chronically ill, mentally ill, handicapped or crippled patient, improved health services for children, and for the health education program.

Perhaps the greatest improvement needed is adequate quarters for our health department program and personnel, a health center so that all of the health activities may be coordinated and developed to fulfill our ultimate aim—good health for all.

Field Training Reflections

BY LUCY LOPP, R.N.

Upon the threshold of becoming a graduate of the School of Public Health Nursing of the University of North Carolina, I review in my mind the qualifications of the public health nurse and wonder if I shall ever attain them. She must be a diplomat, an intellect, and a humanist all rolled into one. She needs wisdom, patience, understanding, and a sense of humor with abounding courage and persistency. Perhaps I shall do well to aspire to these qualifications one at the time.

I am sure that my problems which today seem so puzzling will be amusing at a later time . Never shall I forget the gratifying feeling when I was really able to distinguish a nit from a flake of dandruff and how relieved I was when I learned that "screening" had no relation to copper wire. Up to now I had not realized that normal babies could be so complicated. Ah yes, each mama expects the public health nurse to be an authority on her special brand of infant. And, the grandma's and grandpa's look disappointed when they find the public health nurse has no secret remedy for rheumatism within the compartments of her mysterious black bag. When the Lord put the public health nurse together, I think he must have endowed her generously because He knew much would be required of her.

To cheer the public health nurse

along the way some soul introduced multicolored records upon which to write information she has gleaned from here and yon. With these rainbow colors to inspire the public health nurse, how can record keeping be a task? But she must be on her toes when she changes her colors, which must harmonize with her cases. And, to give her day a perfect ending, another soul wished a code system upon the public health nurse. To make her daily report summary meaningful to public health posterity, she must code properly all the way from A to T.

Cancer A Proclamation

WHEREAS, cancer has become a state and national disaster and its control is the great medical and health problem of our day, which the Congress of the United States has recognized by a special act which designates the month of April as Cancer Control Month, and the General Assembly of North Carolina has, by similar action, so designated the month; and

WHEREAS, cancer ranks second in the nation as a killer and destroys more than 184,000 persons a year—claiming someone's life every time the clock ticks off three minutes; and

WHEREAS, cancer deaths in North Carolina have more than doubled in the past quarter century and reached the all-time high of 2,581 last year; and

WHEREAS, early diagnosis and early and adequate treatment could save at least one-third and probably as many as one-half of those who die; and

WHEREAS, coordinated and adequately financed research offers hope of ultimately conquering cancer; and

WHEREAS, the American Cancer Society, with funds contributed by the public, is undertaking to teach every citizen the facts about cancer and the need for early diagnosis and treatment, to make more and better diagnostic and treatment facilities available to cancer patients, and to finance an ambitious program of research; and

WHEREAS, the fight on cancer in North Carolina is being led by the North Carolina Division of the American Cancer Society, of which Mrs. George E. Marshall, of Mount Airy, is Commander, and the Hon. John D. Larkins, Jr., of Trenton, is State Campaign Chairman; and

WHEREAS, the North Carolina Division is appealing for $168,000 to finance its work during the coming year and its effort to conquer a cruel killer deserves the full support of every citizen in our state;

NOW, THEREFORE, by virtue of my authority as Governor of the State of North Carolina, I do hereby proclaim and declare the month of April as Cancer Control Month in North Carolina, and call upon all citizens and organizations of the state to aid and support this humanitarian work which the North Carolina Division of the American Cancer Society is doing in the interest of public health and the conservation of human life.

Great Seal of the State of North Carolina to be affixed at Raleigh, this seventh day of April, in the year of our Lord, One Thousand, Nine Hundred and Forty-Seven.

R. GREGG CHERRY,
Governor

Governor Cherry and the North Carolina Little Symphony from the North Carolina Symphony Orchestra participated in the official opening of the 1947 observance of April as Cancer Control Month. They took part in a half-hour radio program carried on radio stations throughout the state on Easter Monday. Mrs. George E. Marshall, of Mount Airy, Commander, and Hon. John D. Larkins, Jr., Campaign Chairman for the North Carolina Division of the American Cancer Society, appeared on the program to make short talks.

Later in April, a group of cancer specialists took to the air to discuss cancer control. Dr. Frank Sharpe, of Greensboro, President-Elect of the Medical Society of the State of North Carolina, served as Chairman. Others in the group were Dr. Thomas Leslie Lee, of Kinston, gynecologist and Chairman of the North Carolina Cancer Control Planning and Policy-Making Board; Dr. Henry B. Ivey, of Goldsboro, radiologist; Dr. Donnell Cobb, of Goldsboro, surgeon and former President of the Medical Society; and Dr. Robert P. Morehead, of Winston-Salem, Professor of Pathology in the Bowman Gray School of Medicine.

Another program, entitled "The Greatest of These Is Health," presented Mr. Odell Lambeth, of Greensboro, President of the North Carolina Junior Chamber of Commerce; Mrs. Grady E. Kirkman, of Greensboro, Chairman of the Junior Department of the North Carolina Federation of Women's Clubs; Judge William M. York, of Greensboro, Commander of the North Carolina Department of the American Legion; and Mrs. Donald E. Kent, of Chapel Hill, Educational Director of the North Carolina Division. Miss Myrtle Ellen LaBarr, of Greensboro, Publicity Director for the North Carolina Division, was Chairman.

The trio of programs were furnished in transcribed form to all radio stations of the state as a part of the educational program of the North Carolina Division of the American Cancer Society. They emphasized the importance of early diagnosis and treatment in the saving of human life.

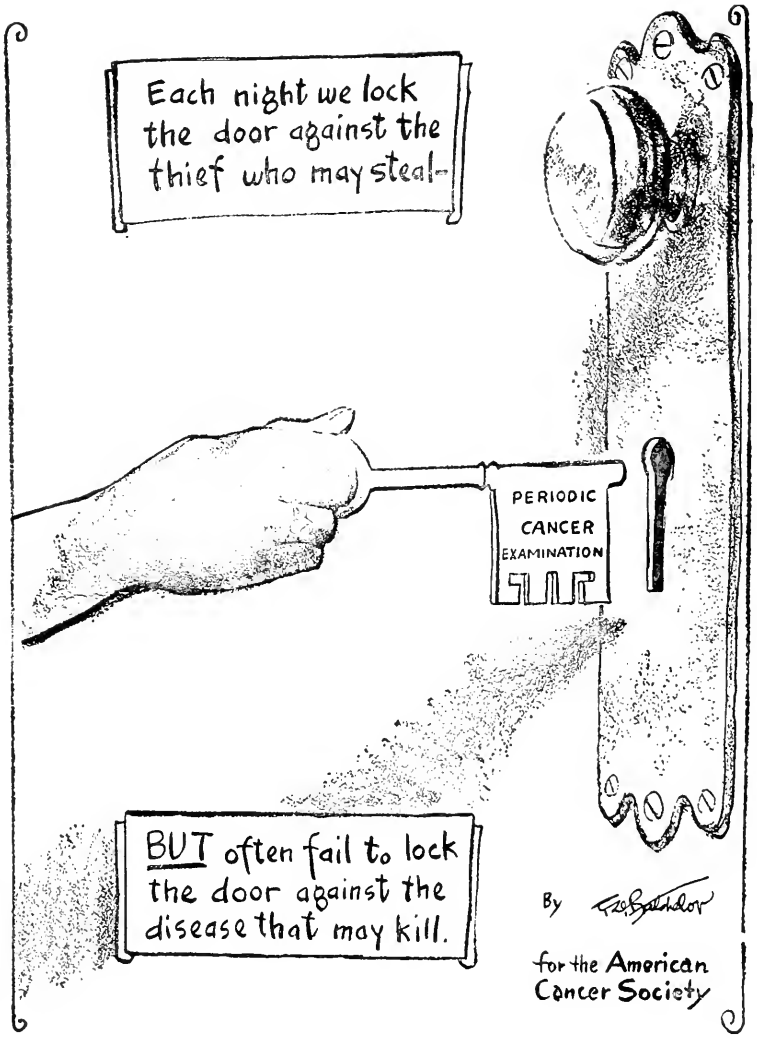
In her talk, Mrs. Marshall reviewed the work of the North Carolina Division during the past year. She explained that the state contributed $42,000 last year to the Society's nationwide research program, placed emphasis on education, and expanded its service to cancer patients.

Mr. Larkins explained the need for funds to finance the Society's program and called cancer a "colossal disaster."

The orchestra, which was directed by Dr. Benjamin Swalin, played six numbers.

The North Carolina Division has asked for $168,000 in its 1947 campaign. The national goal is $12,000,000.

"MICKEY" CAVINESS, age 6, son of Mr. and Mrs. Robert L. Caviness. Mr. Caviness is Sanitary Engineer with the Division of Sanitary Engineering, State Board of Health.


Each night we lock the door against the thief who may steal-
PERIODIC CANCER EXAMINATION
BUT often fail to lock the door against the disease that may kill.
By
for the American Cancer Society

The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD of HEALTH

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Lucy Cornelia Cooper, age 10 months, daughter of Mr. and Mrs. John P. Cooper, Winston-Salem, N. C., granddaughter of Dr. G. M. Cooper, Director of Division of Preventive Medicine.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
Appendicitis
Cancer
Constipation
Chickenpox
Diabetes
Diphtheria
Don't Spit Placards
Endemic Typhus
Flies
Fly Placards
German Measles
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Hookworm Disease
Infantile Paralysis
Influenza
Malaria
Measles
Padiculosis
Pellagra
Residential Sewage Disposal Plants
Sanitary Privies
Scabies
Scarlet Fever
Teeth
Tuberculosis
Typhoid Fever
Venereal Diseases
Vitamins
Typhoid Placards
Water Supplies
Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, North Carolina.

Prenatal Care.
Prenatal Letters (series of nine monthly letters.)
The Expectant Mother.
Infant Care.
The Prevention of Infantile Diarrhea.
Breast Feeding.
Table of Heights and Weights.
Baby's Daily Schedule.
First Four Months.
Five and Six Months.
Seven and Eight Months.
Nine Months to One Year.
One to Two Years.
Two to Six Years.
Instructions for North Carolina Midwives.

CONTENTS

THE Health Bulletin
PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH

Vol. 62 MAY, 1947 No. 5

CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Vital Statistics For 1946

By William H. Richardson
State Board of Health
Raleigh, N. C.

Live births in North Carolina during 1946 totaled 100,595, according to a preliminary, or provisional, report issued by the Bureau of Vital Statistics. This was an all-time high, and the figure above referred to will be increased when delayed reports are all in.

Accepting 100,595 as the total number of live births reported through December, North Carolina's birth rate last year was 26.6, the highest since 1928, when the rate was slightly higher, having been 27.5.

Dr. George M. Cooper, director of the State Board of Health's services to mothers and babies, recently stated that it was possible that North Carolina led the entire Union in its 1946 birth rate, regaining the position it formerly held.

The most significant fact concerning the 1946 report, however, is not that the number of births passed the 100,000-mark, but that, despite the rise in the number of births, there was a pronounced decrease in both the infant and maternal death rates.

Looking back over the situation, Doctor Cooper stated that thirty years ago the infant death rate in North Carolina was approximately 100 for every 1,000 live births, and that the maternal death rate was around 20. In the meantime, public health maternal and infancy clinics have been established and maintained throughout the State, their objective being a reduction of these rates. It has been a long, hard fight.

By 1941, the year of the United States' entry into World War II, North Carolina's infant death rate was 59.5, and its maternal death rate was 4.0. The previous year it was 5.2. Here is shown the decline in both rates since that year:

Infant Death Rate

1941	59.5
1942	47.6
1943	45.1
1944	46.0
1945	43.0
1946	37.9

Maternal Death Rates

1941	4.0
1942	3.5
1943	3.3
1944	3.0
1945	2.7
1946	2.0

An Influencing Factor

An influencing factor in these reductions has been the Emergency Maternal and Infant Care Program, administered by the State Board of Health, with Federal funds.

Without going into details, which already have been given through The Health Bulletin and otherwise, beneficiaries of this program — wives and babies of service men in the lower pay grades—have been given the best of medical care, without cost, including pre-natal, obstetrical and post partum care, and hospitalization, for both mothers and babies during the first year of life.

Undoubtedly, the decline of deaths among mothers and babies in this selected group has influenced the entire vital statistics picture in North Carolina as it pertains to these mothers and babies.

Others Unaffected

Thousands, however, remain in the unaffected group. These mothers and babies are without adequate medical care and hospitalization, for one reason or another.

If the protection that has been afforded wives and babies of service men could be made available to the entire population, it is no exaggeration to assume that the infant and maternal death rates in North Carolina would decline commensurate with the drop that has been shown in deaths from preventable and controllable diseases, such as diphtheria and typhoid fever.

Centralization Means Neglect

So long as our doctors remain concentrated in cities and large towns, and so long as one-third of the counties remain without hospital facilities, final victory will be far in the offing. The EMIC Program is not affecting as many as in the past few years, due to the fact that a majority of our service men have been mustered out.

It now depends on what is offered to take the place of this program, which showed such marked results in the selected group it affected. At this writing, the matter rests with the General Assembly. By the time this appears in print, the decision may have been made.

Much is at stake just now on the future health of the people of North Carolina — not only of mothers and babies, but of the general population.

Life is the one thing to which all humanity clings with a tenacity that has never shown signs of abatement. It is such a precious possession that it has been projected into eternity. A vast majority of those who have inhabited the earth down through the ages have held firmly to the belief that this "mortal shall put on immortality." Science, with all its advancement, has never been able to determine or prove what life **really is.**

We are told that, in the dim past, men and women lived to be hundreds of years old; the Psalmist referred to the span of human existence on the earth as "three score years and ten." In the mid 1800's, it averaged 38 to 40 years. It is now around 63 or 64, as the fight for longevity continues.

There are many factors involved in the fight for the prolongation of human existence — factors too numerous and complicated to consider at this time. It might well be noted that the period of man's expectancy has lengthened with the advancement of medical science—both curative and preventive. The greatest gains have been made in preventing and curing diseases of childhood, thus enabling the individual to reach maturity with a better chance to live to a ripe old age.

Do **you** want to live to be a hundred years old? **You may** do just that. Suppose you were called upon to make a guess as to just how many people in the United States, and in North Carolina, each year die after passing the century mark. It is not any reflection on your intelligence to say that, perhaps, you do not have the slightest idea. The figures, however, are available, and they will, no doubt, interest you.

During 1944, the last for which official comparable figures are available, more people over 100 years old died, throughout the United States and in North Carolina, than died of typhoid fever, diphtheria, malaria or pellagra, all of which are either preventable or controllable. This is a distinct tribute

to preventive medicine, as these diseases, before they were brought under control, took a very heavy toll of human life every year.

That same year, there were more deaths both in the U. S. and in N. C. among people one hundred years of age or older than were caused by scarlet fever—and in North Carolina, more than died of poliomyelitis, which was present for several months in epidemic form.

Deaths throughout the United States totaled 1,411,338. Of this number, 1,225 were 100 years of age or older, including 49 in North Carolina. Of this 49, 40 were negroes, and nine were white people. Of the 40 negroes 29 were women. Most of the 49 were victims of degenerative diseases, such as diseases of the heart and circulation. Many died as the result of senility.

Many people are under the impression that when a person reaches the age of 70, he or she is about ready to depart this life. This is far from being true. Out of a total of 29,390 persons who died in North Carolina in 1944, there were 7,337 who were 70 or over, and 10,306 past 65, the limit of present human expectancy. Add to this, 4,115 babies **under** a year old, and we have a total of 14,421, or nearly half of **all** those who died in North Carolina during 1944. The rest were between one and 64 years of age and included a majority of those who died of tuberculosis and other diseases which take a heavy toll among children and those in middle and early life.

Vital statistics, from a purely statistical standpoint, may be dull and uninteresting, but they do more than tell **the story of life and death.** They reveal **many human interest stories** and teach many valuable lessons. The vital statistics picture, therefore, is one that can be studied to advantage, provided the student has the power of discernment. Death, at some time, awaits every person in the world. Each one of us either has made, at birth, or will make, at the end of life, a contribution to vital statistics. Every day, for eight hours, a force of clerical help is at work at the State Board of Health in Raleigh, listing births and deaths, and the various causes of death. These reports, when they are compiled, are sent to Washington and become a part of the national vital statistics picture.

So far, we have considered the journey's end for humanity, bringing out, perhaps, some facts and figures that are little known, except by those whose duty involves vital statistics.

But there is another angle to the picture which may be equally as interesting and just as surprising to the uninformed. This has to do with the beginning of life.

During 1944, the year under consideration, which, as previously has been stated, is the last for which comparable figures, from a national standpoint, are available, there were 2,794,800 live births in the United States, including more than 90,000 in North Carolina.

Among the mothers in the United States to whom babies were born that year, 53 were more than 55 years old, 134 between 50 and 54, 4,778 between 45 and 49, and 70,073 between 40 and 44. In addition to these, 3,565 who became mothers were between the ages of 10 and 14.

In North Carolina that year 2,711 women over 40 became mothers, including **one** over 55; 8 between 50 and 54; 221 between 45 and 49, and 2,481 between 40 and 44. Added to these were **249 child mothers,** between the ages of 10 and 14 years.

These and the other figures given were taken from the official records of the Bureau of the Census, United States Department of Commerce, and the Vital Statistics Division of the North Carolina State Board of Health.

Ringworm of the Scalp

By C. P. Stevick, M.D.
Acting Director
Division of Epidemiology

In an editorial in a recent issue of the Indiana State Board of Health Bulletin, the following statement appears: "Three or four years ago, when the war in Europe and the South Pacific was just getting under way, we speculated at great length upon the possibility that strange and outlandish diseases would probably be introduced into the United States to plague us for years to come.

"It is interesting to report that none of these fears have materialized, but that another one, epidemic ringworm of the scalp, which wasn't thought of at the time, has really become a serious matter."

In a recent issue of the Journal of the American Medical Association, twenty-four of the forty-eight states were reported to have areas where epidemic ringworm of the scalp was prevalent. The most heavily infected area was in the northeast. A few southern states have reported communities where the disease was prevalent. North Carolina is now in this group. At least two counties in the central part of the state have reported multiple cases.

There are several different types of ringworm, each caused by a different species of a group of micro-organisms known as fungi. The type of ringworm of the scalp that is responsible for the current large number of infections is caused by the organism, Microsporon audouini.

Other types of fungi can cause scalp infections, but such cases usually occur only in small numbers and do not give rise to epidemics. In this group is the species Microsporon lanosum, which is closely related to Microsporum audouini and is primarily a disease of animals occasionally spreading to humans. Unfortunately the non-epidemic type is much more easily cured than the epidemic type.

The appearance of the scalp lesions is not always characteristic for the type of ringworm. The disease begins as an infection of scattered individual hairs. Later, one or more gray scaly patches appear on the scalp. In these patches the hair is broken or absent.

The type of ringworm can be determined by examining the hair under a Wood light. This is an ultraviolet light with a special filter that eliminates most of the visible rays. This light produces a brilliant green fluorescence of hairs infected with Microsporon audouini. Certain other fungi that infect the hair cause a dull white or gray fluorescence.

The chief advantage of the Wood light is that children can be easily and quickly examined with it so that even very early cases can be located. In areas where scalp infections are frequent, green fluorescence of hairs under the Wood light should be assumed to indicate the epidemic type of ringworm.

Control of the disease is dependent upon early recognition of cases and their prompt treatment to prevent spread to others.

Screening examinations of school children with the Wood light offer an effective case-finding procedure. Examination of all the children should be carried out in families where a case is found.

Treatment should be under the direction of a physician. In certain epidemic areas treatment centers have been established by the public health departments in cooperation with the local medical societies.

Local applications of various medications are used, as is also x-ray therapy. X-ray therapy is by far the most

effective treatment; however, it is difficult to administer in rural areas and to large numbers of cases.

The purpose of x-ray treatment is to bring about a complete temporary loss of hair from the scalp. After the hair is removed in this way local treatment is much more effective and usually when the hair begins to grow again practically all cases treated in this way remain cured unless another exposure takes place.

Epidemiological studies indicate that the disease may be spread in barber shops and in theaters and other places where large numbers of children use the same seats or chairs. Personal contact and the common use of combs and hats are also important modes of spread.

In barber shops the contamination of clippers, brushes, and combs with infected hairs from children with the disease is thought to be the mode of transmission. In epidemic areas it is very important for all barber shops to sterilize clippers, combs, and brushes after every use. Small sterilizers are available for maintaining oil at a temperature of 212 degrees. Clippers immersed in this hot oil so that just the blades are covered are disinfected in about one minute and are not damaged by the oil.

The backs of theater seats have been found, in a few cases, to be the site of fluorescent hairs and thereby a possible source of danger to others. If infected children are placed under treatment, however, and instructed to wear stocking caps, they are no longer able to contaminate seats and the theater problem is eliminated.

Several large city epidemics have been successfully controlled by means of treatment clinics, barber shop precautions, and the requirement that infected children wear stocking caps at all times. It has not been found necessary to keep the diseased children out of school unless they failed to continue the treatment.

The control program takes many months and the more serious the situation is before the control program is begun, the more extensive and difficult are the efforts for eradication.

The North Carolina State Board of Health is at present working with local health departments in surveying schools to determine whether or not any potential epidemic areas exist other than those already known. It is hoped that in those counties where there are only a few cases now present prompt action in placing the children under treatment and in having barber shops take special precautions will eliminate the possibility of further spread.

Joe Benson, age six months, son of Mr. and Mrs. J. E. Benson, Raleigh Apartments. Mrs. Benson is a secretary in the Division of Sanitary Engineering of the State Board of Health.

New Slant—Olde Theme

BY ALFRED MORDECAI, M.D.
Davie-Stokes-Yadkin District Health Department
Mocksville, North Carolina

Nebuchadnezzar, the most powerful of the Babylonian Kings lived 600 years before Christ. He lost his health for a time. With his health also went his mind, until he went into the fields and ate greens like the ox and the wild beasts. The greens restored his health and mind. He resumed control of his country and ably conducted the affairs of state for the remainder of his life.

For hundreds of years before the discovery of America the people of England and Northern Europe, half sick with scurvy and vitamin deficiencies, rushed to the fields during the first weeks of spring and devoured the leaves of sorrel and dandelions like rabbits. "A necessary spring tonic," they said—"Health requires it."

Early immigrants to America brought the sheep sorrel from Europe in order that a supply would be available each spring to chase away the blues. This sheep sorrel is in our pastures yet.

The old time settlers in America placed great store by such things as Poke Greens and Cress (creesis), which appear very early in the spring. "Spring tonic," they said; "Such things purify the blood."

Yes they were right. Medical science and nutrition experts back them up. When long denied green substances, mankind develops a number of vitamin deficiency diseases and disorders. Among these may be listed pellagra, scurvy, rickets, and that well known condition "Old Run Down State." The prevention and the cure are to be found in greens, other fresh vegetables and fruits. If we are too young or too old to eat these things, then we may let the cows eat them for us and we may get them by drinking fresh milk.

Sorrel and Poke greens, and dandelions and cress, and bananas and oranges are less easily obtained in the rural areas these days than good garden vegetables. This is an argument for better winter gardens and early spring gardens. Lettuce, mustard greens, turnip greens, kale, collards, cabbage, endives, onions, leaks, carrots, beets, salsify and radishes. There are a number of these things that do well in all temperate climates. Some of them resist hard freezes. All of them are valuable tonics and far better than most vitamin pills.

Whether Nebuchadnezzar had pellagra and lost his hind in the natural course of this disease, we do not know, but the fact remains that some wise prophet, or Providence guided him to the fields and gardens, where he ate vitamin rich greens of some description. His symptoms subsided and he regained his health. That is pretty much the way we treat pellagra today. In this way some miracles are worked.

Greens and other fresh vegetables lose much of their value if gathered too far in advance or if not properly stored. Proper storage consists of keeping the vegetables cool, moist and covered. Withering and drying processes undoubtedly destroy much of the vitamin contents. Much effort is being put forth by markets to properly guard this type of perishable food-stuff, but this adds to costs even when imperfectly managed.

I claim that every farmer should have his own kitchen garden and a good one.

Western North Carolina District Public Health Association Holds Its First Meeting

BY IRENE CLARK, *Secretary*
P. H. Nurses' Section

The first meeting of the Western N. C. District Public Health Association held its first meeting in Asheville on February 21, 1947. Public health representatives from the twenty-eight county districts attended the meeting.

At the Public Health Nurses' Section meeting, the program was devoted chiefly to discussions and talks on pre-school clinic work. A demonstration which had been arranged was not carried out because of the inadvisability of bringing young children out in the snowy weather. Dr. Catherine Carr, school physician for the City of Asheville, gave an interesting talk on pre-school clinics, emphasizing the following points:

The attractiveness of the invitation to the pre-school child and the reception given him upon his arrival at the clinic.

The importance of utilizing Parent-Teacher aid to the nurse and doctor in record making, etc.

The importance of record keeping of physical findings and immunizations and ways of notifying parents of defects found, in the event that parents were not present with the child at the clinic.

Educational methods used in informing parents of immunizations which should be repeated at pre-school clinics.

Miss Ruby Reister of the City of Asheville Health Department explained briefly the method of record keeping, and the follow-up visit made by the public health nurse in an effort to get defects corrected.

Mrs. Hazel Beavers of the Yancey County District Health Department discussed various phases of pre-school clinic work in her district.

Mrs. Doris Hicks of Swain County told of the efforts of the P.-T.A. in interesting parents to bring their children to the pre-school clinic.

Following these discussions, Mrs. Louise P. East gave the highlights from a lecture by Dr. W. L. Venning, pediatrician of Charlotte, on "New Trends in Pediatrics."

NOTES AND COMMENT

By the Acting Editor

The month of May has been properly designated as "Child Health Month." Proclamations have been issued by Presidents and Governors to make the matter official. Even if our chosen leaders did not make their bows of respect to the child, the month of May would be acclaimed generally as the month for children. In the climate of the north temperate zone it is the time when young plants and animals are making their presence known to all who have eyes to see or ears to hear. We instinctively turn our thoughts to the young humans we call children and to the women who bring new life into the world.

The May Health Bulletin for the past

several years has been publishing birth rates, infant mortality rates and maternal mortality rates. To the casual reader this statistical material may look just like a series of numbers. Others who are students of public health or kindred problems may become so interested in rates that they forget that these numbers mean lives of human beings. It may be new life as in the case of births or the loss of life when we deal with infant mortality or maternal mortality. Comparisons may be odious but they are indulged in by some good people. When we look at the figures published on page 15 we will note that North Carolina, in comparison with other states, had a higher birth rate in the year 1945 than most of the other states in the union, being excelled only by New Mexico, South Carolina, Mississippi and Utah. The rate for the United States as a whole was 19.6—North Carolina had 26.2, New Mexico 31.2. North Carolina's infant mortality rate has shown remarkable improvement. If it were not for the fact that the other states in the union were also improving, our relative position among the states would be much better. For the country as a whole the infant mortality rate for the year 1945 was 38.3. North Carolina rate for 1945 was 43.3 In 1946 North Carolina's rate was 37.1 which is lower than that of the nation for the year 1945. It would be interesting to see where North Carolina stands among the states in regard to infant mortality for the year 1946. In 1945 it was still easier to count the states that have a worse rate than we have than it is to count those who have a better rate. Only 13 states and the District of Columbia lost a higher proportion of its infants during the year 1945. These states are: Alabama, Arizona, Colorado, Florida, Kentucky, Maine, Nevada, New Mexico, South Carolina, Tennessee, Texas, Virginia and West Virginia. New Mexico had the most disgraceful record, losing a little more than 10% or 100 per thousand.

North Carolina has also improved its material mortality rate, the 1945 rate being 2.8 whereas, the rate for the United States for that year was 2.1. The provisional rate for North Carolina for the year 1946 is 2.1, the same as the United States for 1945. The following states have maternal mortality rates higher than North Carolina: Alabama, Arizona, Arkansas, Delaware, Florida, Georgia, Mississippi, New Mexico and South Carolina, or there are nine other states where motherhood is more hazardous than it is in North Carolina. The interest in maternal mortality in North Carolina was never greater than it is at the present time. The Medical Society of the State of North Carolina has a Committee which is reporting each month the number of maternal deaths and, the causes which contributed to this death rate. Each month an important factor in maternal hazards is discussed. We—in North Carolina are not resting on our laurels.

The average maternal mortality rate for a Five-Year Period extending from 1932 to 1936 was 7.1. In 1941 our rate was 4.0, in 1946 the provisional figures were reported as 2.1.

* * * *

RECONCILIATION. A paper "Vital Statistics for 1946" by Mr. William H. Richardson reports live births for 1946 as 100,595. The data published on page 16 accounts for 94,778 births as the provisional figure for 1946. These figures must be reconciled. The Acting Director of the Division of Vital Statistics gave us this explanation. During the year 1946 there were 100,595 births reported. This number included some children who were born in 1945, some who were born in 1944 and previous years. The 94,478 births accounted for on page 16, the provisional report for 1946 by county, is the number of births that occurred during the year 1946 and which were reported to the Bureau of Vital Statistics up until the time this table was compiled. The Acting Director estimates that when all births for 1946 are reported, that the number will probably be in excess of 100,000. In all probability the rates which Mr. Richardson quoted are correct and will be established as correct when all the information is in.

POISON IVY, POISON OAK, POISON SUMAC. Plants in this general classification will cause an itchy torture—which the tender skin of children seems almost **universally** susceptible. Some of us older people seem to acquire a degree of immunity; certainly we learn to keep our faculties on the alert when we venture into those attractive paths through the woods and the wide open spaces. The child is usually too much enthused with the new things to be seen to remember cautious instructions which have been given him in regard to the danger of plants of this type. The Camping Woodcraft Department of Field and Stream has this to say:

"There are several types of poison ivy, some low and trailing, some shrublike, and others with such stout trunks as to be regarded almost as trees. Certain forms are known as "poison oak" but the active poison, a non-volatile oil, is the same in all of them. Probably the most common type is the climbing Rhus radicans.

"Poison ivy has a glossy, three-part leaf usually somewhat irregularly toothed along the edge. The plant is sometimes confused with the harmless and beautiful Virginia creeper which, however, has a five-part leaf and bears dark blue berries instead of white ones.

"The kind of poisonous oil produced by the poison ivy is also found in the poison sumac. This shrub or small tree, except in a few localities is less common than poison ivy. It is a relative of the attractive staghorn sumac that brightens the autumn landscape with its terminal clusters of closely packed red berries. These two types of sumac are easily identified, the poisonous species bearing sparse clusters of grayish-green berries that appear at the axils of the leaves.

"If one cares to take some preliminary precautions against ivy poisoning, probably the best protection is afforded by a rich lather of yellow laundry soap allowed to dry on the skin before going into the fields or woods. At the end of the trip the removal of this soapy protective film is an easy matter, and it is well worth the bother."

The plants which cause these skin irritations can be eradicated. In the hope of accomplishing that objective we summarize a worthwhile article.

HOW TO FIGHT POISON OAK

Writing in the **American Journal of Public Health,** Dr. C. E. Turner, well-known in the field of Public Health Education, gives an interesting discussion of "Rhus Dermatitis as a Public Health and Public Health Education problem."

"Rhus Dermatitis" is simply the medical term for the well-known result of contact with poison oak or poison ivy. Bear this in mind, please, when reference hereafter is made to "Rhus Poisoning."

Doctor Turner's paper is the result of extensive research. "Rhus poisoning," he reports, "has received only minor attention from Public Health authorities, yet the United States Public Health Service study on the illnesses of 38,544 people shows a rate of 2.5 cases per 1,000 people annually."

The writer goes on to point out that:

"Seventeen and seven-tenths per cent were bed cases and were in bed 3.6 days on the average. The average total duration of the symptoms was ten days. Cases appeared in every part of the country, the crude case rate per one thousand being 2.3 in the Northeast, 1.5 in the North Central States, 2.5 in the South, and 4.6 in the West.

"National figures using these cases as a basis indicate 350,000 cases per year, with approximately 600,000 days of lost time and 465,000 medical visits. Most cases are uncomplicated, but abcesses, enlarged glands, fever and septicemia from a secondary infection occasionally occurs."

The author continues:

"The incidence of Rhus poisoning runs much higher among youth in localities where the plant is profusely distributed. In one student body where data were available upon about 5,000

students for a 2-year period, 6.5 students per one thousand were hospitalized yearly for an average of 6.9 days each, representing a per capita cost of fifty-six cents for **each student in the student body."**

Thus, we have the findings of Doctor Turner in the field of research which he entered in making his study of the effects of poison ivy, or poison oak. While these figures are very enlightening and furnish some totals and percentages which would hardly come to our attention in our individual experiences, there is hardly a family in North Carolina which has not, at some time, either experienced or observed the results of this form of poisoning. Many parents recall swollen, burning, itching, squirming youngsters and the remedies administered, some giving a measure of relief, others none whatsoever. Many concoctions have been devised and put on sale for poison oak or poison ivy; some recommended by doctors, others the result of hearsay, and even superstitions.

Doctor Turner, in his article, substantiates the fact that this form of poisoning does constitute a problem; but, at the same time, he brings out the encouraging fact that this ailment now clearly falls under the ever-advancing power of preventive medicine. In this connection, he does not discuss immunization—real or fancied—of the individual. He attacks the plague at its source, by giving some interesting data on how plants causing the poisoning and consequent discomfort, if properly attacked, can be exterminated.

Three Misunderstandings

"There are three widespread misunderstandings," Doctor Turner points out.

"1. The public thinks of poisonous forms of ivy, or oak or sumac. Really, of course, the plants are of only a single genus, Rhus or Toxicodendron, and perhaps of only one species. In the past, over fifty species have appeared in the literature under the genus Rhus. They have now been given a new classification accepted by the U. S. Herbarium in Washington, D. C., under the genus name Toxicodendron.

"2. It is generally believed that some individuals are so sensitive that they are poisoned if they 'go anywhere near the plants'." It has been demonstrated, he explained, that the poison is only partially airborne.

"3. There is a widespread confusion as to the nature of susceptibility and 'immunity'. The idea that some persons have a true, natural immunity is wrong. It is believed that we are dealing with allergy and desensitization, rather than with a true immunity, natural or acquired. All observers believe that the typical dermatitis is the result of contact after previous exposure and sensitization to the active substance in the plants. Some persons have a marked resistance to the action of the poison, although their skin becomes inflamed upon prolonged exposure . . ."

Doctor Turner goes on to say that efforts to teach the public to recognize and avoid poison plants have proved ineffective.

Exterminate the Cause

We shall now consider extermination. It is brought about by applying what is known as 2,4-D to the plants. We shall use no technical words to describe the formula. The material now may be secured at any well-equipped store that carries a full line of sprays, insecticides, fungicides, herbicides, etc. The material 2,4-D is classed as an herbicide, in that it destroys certain plants, including those of the genus Rhus. It comes in tablet and liquid form, according to information secured at one of the North Carolina leading seed stores, and the well-informed clerk will be able to tell you how to prepare it for spraying the plants you wish to destroy. So when you use it, be sure you are informed as to procedure — and secure your information from a reliable source, such as a seed store staffed by competent personnel.

Doctor Turner makes the statement that: With 2,4-D, commercial companies engaged in weed control are

now ready to guarantee complete eradication of poison ivy or poison oak.

But it would now appear possible that you can do this yourself. You must, of course, be able to identify the poisonous plants; then, you must apply the spray.

Facts About 2,4-D

Bearing on this point, Doctor Turner says:

"2,4-D is a hormone-like chemical which, in small quantities, stimulates growth but kills active broad-leaved plants completely when applied to the leaves in greater concentration. Some re-spraying of missed plants after a month, and a yearly spring check-up, will be needed. But when the plant is eradicated in frequented areas, the seeding of new plants will be limited. The spray, he goes on to say, "can be made from 8 to 12 cents per gallon in small quantity, and for as little as $3 to $4 per 100 gallons. It is not a fire hazard, nor is it corrosive to metals or irritating to the skin, or poisonous to man or other animals. It does not kill grass in the concentration used, but it does kill many broad-leaved plants besides poison ivy."

Again, the suggestion is made that you consult your seed dealer for details as to 2,4-D and how to prepare it for spraying poisonous plants. We have no particular dealer in mind, as good ones can be found in almost any locality.

Some Pertinent Suggestions

Doctor Turner gives the following six pertinent suggestions:

"1. Be sure the chemical is well mixed in the correct concentration.

"2. Spray when the leaves are well developed, giving a large surface. (2,4-D is not effective late in the season when the plant has become dormant.)

"3. Spray the whole plant and cover the leaf surfaces as completely as possible, but be careful that the drift of the spray does not wet flowering plants or fruit trees. (Neither moisture on the leaves, nor rain four or more hours after spraying will prevent the killing action of the spray.)

"4. If a few plants have survived, kill them by spraying a second time in three or four weeks.

"5. Examine the area the next spring, and kill the new plants which may have come up from seed.

"6. Clean spraying equipment thoroughly before using other sprays on cultivated plants."

And so, we have tried to give you a "preventive medicine" remedy for a very disagreeable ailment, usually prevalent in summer.

* * * *

DR. B. E. WASHBURN. From the Tryon Daily Bulletin and the Polk County News we learn of the recognition given Dr. Ben Washburn upon his retirement as District Health Officer for Rutherford and Polk Counties.

"One of the nicest meetings ever held in Tryon was the joint Rotary-Kiwanis meeting Friday at Oak Hall hotel with L. K. Singley officiating. Dr. Ben Washburn was honored with a certificate of meritorious service in recognition of his contribution to the public health work in Polk County and for his entire distinguished career which included starting the first public health work in the United States in North Carolina, 20 years as a representative of the Rockefeller Foundation which included public health service in Europe and the West Indies; and more particularly his service to this section during the war when he responded to the needs of the people on account of a shortage of doctors. Dr. G. M. Cooper, assistant head of the State Board made the principal address and spoke highly of Dr. Washburn not only for his medical knowledge, diplomacy, public achievements, but for his outstanding character as a man of honor who chose service to others above self. Dr. John Z. Preston made the award; Dr. M. C. Palmer spoke of the fine cooperation and help Dr. Washburn gave during the war and introduced his successor, Dr. J. L. Ramseur, who responded that he would try to follow Dr. Washburn's footsteps as closely as possible. Dr. Allen Jervey made the closing remarks of honor. In

his response, Dr. Washburn gave thanks for the cooperation of the medical profession and said that he considered any honor given to him as also given to the entire county board and staff who carried out the work of improving the health of this section. Among the other guests at the meeting were Mrs. Washburn; Mrs. Pearl, the county nurse; and Miss Jeanette MacGregor, Superintendent of public welfare.

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PROTECT THE CHILD. The Connecticut Weekly Health Bulletin frequently carries material which we can use advantageously here in North Carolina. We quote:

Conserving Children's Hearing

Recent surveys on the prevalence of hard of hearing children revealed that there are large numbers throughout the country with defective hearing in one or both ears. Many of these children have hearing loss to such a degree as to hinder them in school work and in their ordinary home activities.

Fortunately, during the past 20 years many advances have been made which benefit the hard of hearing. Today a great deal is known about controlling the tendency to lose hearing and much has been learned about both the mechanism of hearing and the various devices to aid impaired hearing.

Hard of hearing children have numerous needs, each of which must be handled by experts. Children with slight hearing loss require different care than those with severe impairment. The main objective of any hearing conservation program, however, is to give the patient hearing, regardless of the methods used. In some cases an accurately fitted hearing aid will bring conversational speech to the child. Others may require lip reading instruction. Since speech is dependent upon hearing, most children with hearing loss have defective speech, and therefore need speech training. Those who have heard very little or heard incorrectly require acoustic training to teach them to associate sound with hearing. Children who have been fitted to a hearing aid usually need this training. Instruction in a school for the deaf must be provided for children who have hearing loss so severe as not to hear conversational voice, even when magnified by a hearing aid.

In March 1945, Connecticut took a step toward meeting present needs by establishing a clinic for the diagnosis, treatment and after-care of children with hearing defects. During the year and a half the program was operated, 77 children made 148 visits to the clinic. Three main types of defect were encountered.

Children in the first group were found to have no hearing loss. The difficulties for which they were referred to the clinic were based upon other conditions, illustrating the fact that professional personnel are aware that certain child behavior symptoms may point to hearing loss as the source of trouble.

Children in the second group had hearing losses of a type which could be improved by medical or surgical treatment. Conditions such as obstruction of the Eustacian tube by adenoids and hearing loss due to chronic nose and throat infections, were prevalent in this group. Removing infected adenoids and tonsils or taking steps to clear up draining ears often restores hearing. In instances where diseases of the nose and throat occurred, attempts were made to eliminate these conditions. Otosclerosis (or hardening and fixation of one of the three little bones of the inner ear, thus preventing the vibration of the ear drum from being transmitted to the inner ear) can be successfully treated by the fenestration operation.

A third group of children examined at the clinic had hearing losses which could not be improved by medical or surgical treatment. These children had either congenital deafness, or middle ear deafness of long duration. Many of the children in this group can be helped to understand hearing through such procedures as use of the hearing aid, lip reading, and acoustic training.

LIVE BIRTHS, INFANT MORTALITY AND MATERNAL MORTALITY UNITED STATES, 1945

STATE	Live Births		Infant Mortality (Death in the 1st Year of Life)		Maternal Mortality	
	Number	Rate Per Thousand Population	Number	Rate Per Thousand Live Births	Number	Rate Per Thousand Live Births
United States	2,735,456	19.6	104,684	38.3	5,668	2.1
Alabama	70,321	25.8	3,141	44.7	240	3.4
Arizona	13,348	22.7	917	68.7	40	3.0
Arkansas	39,628	23.1	1,256	31.7	116	2.9
California	184,380	22.7	5,991	32.5	298	1.6
Colorado	23,511	22.2	1,188	50.5	56	2.4
Connecticut	33,765	19.1	1,011	29.9	39	1.2
Delaware	5,984	21.6	233	38.9	19	3.2
Dist. of Columbia	16,141	19.3	780	48.3	24	1.5
Florida	47,791	23.2	2,093	43.8	141	3.0
Georgia	74,852	24.9	3,162	42.2	242	3.2
Idaho	11,501	25.0	403	35.0	23	2.0
Illinois	138,705	18.4	4,377	31.6	235	1.7
Indiana	68,444	20.2	2,462	36.0	113	1.7
Iowa	44,934	20.1	1,363	30.3	79	1.8
Kansas	33,624	20.3	1,109	33.0	63	1.9
Kentucky	60,892	24.2	2,858	47.0	155	2.5
Louisiana	57,838	24.7	2,488	43.0	145	2.5
Maine	16,687	21.6	773	46.3	41	2.5
Maryland	42,791	21.2	1,626	38.0	64	1.5
Massachusetts	77,064	18.9	2,436	31.6	141	1.8
Michigan	112,655	20.7	4,035	35.8	165	1.5
Minnesota	54,656	22.0	1,698	31.1	75	1.4
Mississippi	54,263	27.3	2,204	40.6	206	3.8
Missouri	65,659	18.9	2,464	37.5	150	2.3
Montana	10,601	23.4	363	34.2	17	1.6
Nebraska	24,128	20.9	687	28.5	36	1.5
Nevada	2,851	21.0	132	46.3	5	1.8
New Hampshire	8,338	18.7	303	36.3	15	1.8
New Jersey	77,338	18.8	2,476	32.0	124	1.6
New Mexico	15,306	31.2	1,543	100.8	57	3.7
New York	234,754	19.0	7,461	31.8	412	1.8
North Carolina	87,401	26.2	3,782	43.3	248	2.8
North Dakota	13,147	25.3	385	29.3	14	1.1
Ohio	132,496	19.4	4,830	36.4	235	1.8
Oklahoma	43,165	22.2	1,727	40.0	97	2.2
Oregon	24,140	20.2	692	28.7	32	1.3
Pennsylvania	173,799	19.0	6,590	37.9	384	2.2
Rhode Island	13,635	19.5	384	28.2	19	1.4
South Carolina	49,431	27.5	2,469	49.9	169	3.4
South Dakota	12,460	23.7	388	31.1	16	1.3
Tennessee	64,966	22.9	3,096	47.6	153	2.4
Texas	157,915	24.9	7,703	48.8	358	2.3
Utah	15,680	26.5	488	31.1	21	1.3
Vermont	6,873	22.2	238	34.6	12	1.7
Virginia	67,068	23.9	3,178	47.4	142	2.1
Washington	44,573	22.8	1,539	34.5	76	1.7
West Virginia	39,039	22.7	2,030	52.0	66	1.7
Wisconsin	61,437	20.9	1,913	31.1	85	1.4
Wyoming	5,481	23.4	219	40.0	5	0.9

The North Carolina Public Health Association will meet in Charlotte November 3rd, 4th and 5th

Headquarters and all meetings will be at the Charlotte Hotel. Other hotels will allot space. Make your reservations early but cancel, please, if you just can't come.

Hotel	SINGLE	DOUBLE
Charlotte	$3.50 to $5.00	$5.00 to $8.00
Barringer	3.50 to 8.00	6.00 to 8.00
Mecklenburg	2.50 to 2.75	5.25
Selwyn	2.50 to 2.75	5.00

TOTAL NUMBER OF BIRTHS AND DEATHS UNDER ONE YEAR OF AGE (EXCLUSIVE OF STILLBIRTHS) ALSO MATERNAL DEATHS IN EACH COUNTY, WITH RATE PER THOUSAND LIVE BIRTHS, 1946

COUNTY	Infant Mortality Place of Residence		Maternal Mortality Place of Residence		Total Live Births Place of Residence
	No.	Rate	No.	Rate	No.
Alamance	42	26.9	2	1.3	1,563
Alexander	18	53.9	1	3.0	334
Alleghany	2	17.4	..	..	115
Anson	24	38.5	..	....	624
Ashe	15	29.8	..	..	504
Avery	19	42.9	1	2.2	443
Beaufort	38	37.3	6	5.9	1,019
Bertie	39	53.0	2	2.7	736
Bladen	32	40.0	5	6.2	799
Brunswick	17	31.1	3	5.5	546
Buncombe	100	35.4	3	1.1	2,827
Burke	26	24.5	3	2.8	1,060
Cabarrus	44	28.4	3	1.9	1,550
Caldwell	49	44.2	..	..	1,108
Camden	5	39.4	..	..	127
Carteret	24	48.6	..	..	494
Caswell	18	40.3	..	..	447
Catawba	47	31.4	2	1.3	1,498
Chatham	24	43.1	..	....	557
Cherokee	26	49.8	..	....	522
Chowan	12	35.8	..	....	335
Clay	4	29.6	..	..	135
Cleveland	44	28.5	3	1.9	1,543
Columbus	66	50.5	5	3.8	1,308
Craven	37	35.9	3	2.9	1,031
Cumberland	65	37.6	7	4.0	1,730
Currituck	1	9.4	..	....	106
Dare	6	63.2	..	..	95
Davidson	49	36.0	3	2.2	1,363
Davie	5	15.5	..	..	323
Duplin	37	42.9	2	2.3	862
Durham	68	28.9	5	2.1	2,351
Edgecombe	62	47.8	3	2.3	1,298
Forsyth	113	34.9	5	1.5	3,237
Franklin	24	35.4	4	5.9	678
Gaston	78	33.2	2	0.9	2,349
Gates	14	63.6	..	..	220
Graham	5	28.2	..	..	177
Granville	26	36.0	1	1.4	722
Greene	22	44.4	2	4.0	496
Guilford	150	38.4	6	1.5	3,908
Halifax	64	38.2	6	3.6	1,677
Harnett	40	34.0	1	0.8	1,177
Haywood	42	39.1	1	0.9	1,074
Henderson	21	30.5	..	....	689
Hertford	10	28.7	..	..	348
Hoke	31	71.8	3	6.9	432
Hyde	1	65.8	..	..	152
Iredell	27	24.9	4	3.7	1,083
Jackson	20	43.5	2	4.3	460
Johnston	80	46.8	3	1.8	1,709
Jones	10	41.3	..	..	242
Lee	22	37.0	2	3.4	595
Lenoir	46	39.9	6	5.2	1,153
Lincoln	17	30.6	1	1.8	555
McDowell	20	36.1	..	....	554
Macon	16	38.9	..	....	411
Madison	12	27.5	3	6.9	436
Martin	26	35.5	2	2.7	733
Mecklenburg	152	36.5	5	1.2	4,161
Mitchell	5	12.9	2	5.2	387
Montgomery	16	39.9	..	..	401
Moore	19	24.1	..	..	789
Nash	59	36.4	1	0.6	1,620
New Hanover	101	52.0	2	1.0	1,941
Northampton	19	26.4	2	2.8	719
Onslow	26	35.8	2	2.8	726
Orange	23	34.0	..	....	677
Pamlico	13	50.0	..	..	260
Pasquotank	23	40.1	2	3.5	574
Pender	15	31.5	..	..	476
Perquimans	7	27.0	3	11.6	259
Person	19	29.3	1	1.5	659
Pitt	77	47.3	4	2.4	1,628
Polk	5	20.9	..	....	239
Randolph	44	37.5	..	....	1,174
Richmond	42	42.0	2	2.0	999
Robeson	94	40.0	7	3.0	2,353
Rockingham	50	33.5	2	1.3	1,493
Rowan	41	25.9	5	3.2	1,584
Rutherford	26	23.4	1	0.9	1,111
Sampson	46	36.3	4	3.1	1,266
Scotland	35	61.9	1	1.8	565
Stanly	37	40.7	4	4.4	908
Stokes	19	41.5	1	2.2	458
Surry	47	39.9	1	0.8	1,177
Swain	8	26.2	2	6.6	305
Transylvania	12	29.1	..	..	412
Tyrrell	6	48.8	1	8.1	123
Union	31	30.8	1	1.0	1,007
Vance	45	57.3	1	1.3	785
Wake	112	39.6	11	3.9	2,825
Warren	34	56.5	..	..	602
Washington	16	52.4	1	3.3	305
Watauga	15	32.1	1	2.1	467
Wayne	47	35.8	3	2.3	1,313
Wilkes	36	32.0	2	1.8	1,126
Wilson	69	49.0	5	3.5	1,409
Yadkin	8	18.2	..	..	439
Yancey	4	9.0	1	2.2	446
Entire State	3,505	37.0	197	2.1	94,778

Provisional figures—includes only 1946 receipts.

The Health Bulletin

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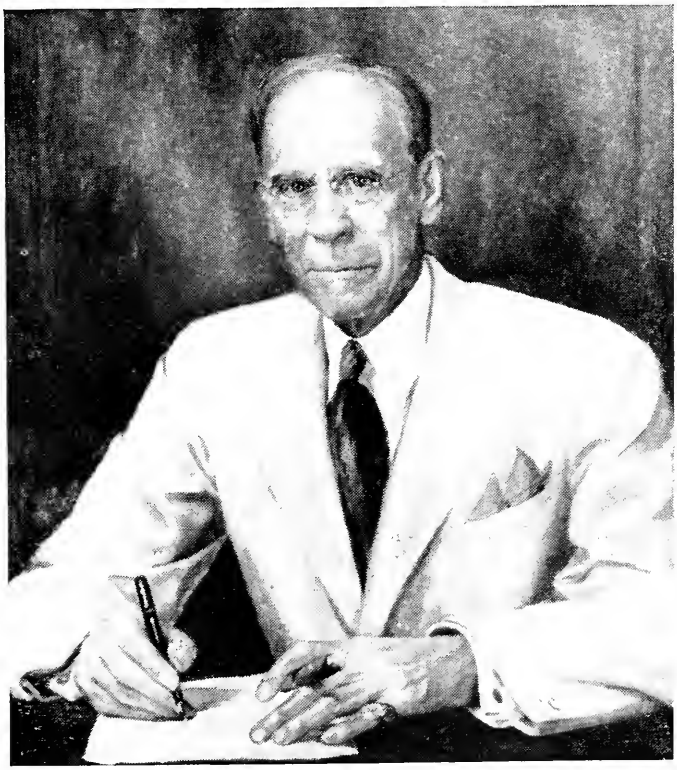

CARL V. REYNOLDS, M. D.
Secretary and State Health Officer

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
Appendicitis
Cancer
Constipation
Chickenpox
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Don't Spit Placards
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Teeth
Tuberculosis
Typhoid Fever
Venereal Diseases
Vitamins
Typhoid Placards
Water Supplies
Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, North Carolina.

Prenatal Care.
Prenatal Letters (series of nine monthly letters.)
The Expectant Mother.
Infant Care.
The Prevention of Infantile Diarrhea.
Breast Feeding.
Table of Heights and Weights.
Baby's Daily Schedule.
First Four Months.
Five and Six Months.
Seven and Eight Months.
Nine Months to One Year.
One to Two Years.
Two to Six Years.
Instructions for North Carolina Midwives.

CONTENTS

THE Health Bulletin
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Vol. 62 JUNE, 1947 No. 6

CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Annual Report North Carolina State Board of Health

To

Conjoint Session State Medical Society

CARL V. REYNOLDS, M. D.
Secretary and State Health Officer

Virginia Beach, Virginia
May 14, 1947

IT is a far cry from the seventies, when Dr. Thomas Fanning Wood, of Wilmington, caught a vision of the possibilities of public health work in North Carolina and began the task of tediously translating that vision into terms of service that has saved the lives of countless thousands, down through the ensuing decades.

Doctor Wood's vision never left him; under its influence, he worked through the Medical Journal, of which he was the editor, until his efforts reached the people of the State in concrete form in 1877, when the General Assembly created the North Carolina State Board of Health, the twelfth such Board to be established in the United States.

There is also a tremendous gap between the sum of $100, which was the first annual appropriation voted the State Board of Health after its creation by the Legislature, and the millions now being spent on Public Health in North Carolina.

During the fiscal year of 1934-1935, when it became my privilege to enter upon my duties as your State Health Officer, around $821,578 was spent including a State appropriation of $303,933 and around $517,645 from the counties, the U. S. Public Health Service, the Rockefeller Foundation, and other sources.

During the present fiscal year, which ends the 30th of next month, the magnificent amount of $5,337,183 is being spent for all Public Health purposes in North Carolina, State and local, of which only $558,434 is coming from Legislative appropriation, the rest from the Federal government, the counties and philanthropies. Included in this grand total are the following amounts: Federal appropriation, $1,643,935; Reynolds Fund and Rockefeller Founda-

tion $164,895; counties, $1,839,549. Included in the grand total also is the sum of $1,026,870 for carrying on what is known as the ENIC Program for the wives and babies of service men, this being Federal money channeled through the State Board of Health and spent under rules and regulations adopted by the State Board of Health.

Pitiful, isn't it? It would seem that the appropriating bodies of the Federal Government think better of health and its value for and to the citizens of these United States than our State appropriating body thinks of the health of our people here in North Carolina. This is, indeed, a sad commentary and we should busy ourselves to correct it. In contrast with the State appropriation for Public Health, which has shown only a paltry increase with the passing of the years, the amount available for highways this current fiscal year, is $57,800,000, while $38,610,706 is the amount of estimated expenditures for public schools. These are worthy causes; they are essential to the progress of our people. North Carolina set a startling example for the entire nation when it took over the total cost of operating its public schools and highways on a Statewide basis.

When, I ask, will North Carolina show the same wisdom in its Public Health preventive program that it has shown in financing its public school program and its highway program? Are not the lives of our people worth an effort which is more commensurate with what the State is doing to develop the intellects of its children and the convenience of those who use the highways? This question will never be answered until the State is aroused to a sense of its duty in this respect and acts accordingly. The place to begin is with those you elect to the Legislature. It is a grass roots problem, after all. Think that over!

The State has lost $200,000 a year, by reason of the transfer of Reynolds Foundation's funds to Wake Forest College. To compensate for this loss, the 1947 Legislature, after much pressure, voted to supply $175,000 a year, an amount not only less than what we lost, but allowing for no expansion of the Venereal Disease Program, which has distinguished North Carolina throughout the nation and the world.

The record of public health in North Carolina vindicates the vision of Doctor Wood and the performance of those who have carried on through the years, in the field of preventive medicine, to which public health is dedicated. It has not attempted to invade the field of curative medicine, except in the case of the indigent and the underprivileged who could not pay for medical services, and its efforts to afford mass protection against contagion, an undertaking that cannot be entered into by the private practitioner of medicine, who looks to public health as does the laity, to attack the spread of contagious diseases in the name of the people from whom it derives its support.

The decline of controllable and preventable diseases during the decades that have marked the history of public health in North Carolina is a testimonial that cannot be overlooked.

Some Concrete Evidences

What are some of these diseases and to what extent have they been controlled, prevented, or even eradicated? We shall consider just a few in passing. Printed tabulations have been made covering the period from 1914 through 1946. In 1914, the death rate from diphtheria in North Carolina was 15.3 per 100,000 inhabitants, and the following year it rose to 22.1. In 1939, the year compulsory immunization became operative, the rate was 4.8, while last year it was only 1.4. Observance of the immunization law is not supported or enforced as it should be, for if it were, diphtheria would be as rare as smallpox, from which there has seldom been a

death in many years. In this regard, we should be embarrassed.

Whooping cough now has been placed in the preventable class, and for that reason immunization against it during the first year of life has been made compulsory. From that juvenile disease enough children died in 1914 to make the rate 18.7 per 100,000 population. The 1946 rate was only 1.5.

What has been done in the way of typhoid fever control, which now amounts almost to eradication, speaks for itself. You are all familiar with the two weapons with which this has been done—immunization and sanitation. In contrast with a death rate from typhoid fever of 35.8 per 100,000 population in 1914—and 22.2 in 1918, the second year of our participation in World War I, the death rate last year was only 0.3 per 100,000 population. The number of deaths was only 10 for the entire twelve months.

With the battle only really begun in earnest, we are winning in our fight against tuberculosis. A subsequent report will show what we are doing in our case-finding program, and we will not discuss that in detail in this preface, but the death rate from all forms of tuberculosis in North Carolina last year was only 27.9 per 100,000 population, as compared with approximately 140 in 1914.

I might go on and name other victories that have been chalked up by preventive medicine, with which most of you, my fellow physicians and coworkers, are familiar. As we often point out for the information and benefit of the laity, there are two forms of medicine, curative and preventive. The successful promotion of both must rest upon a working and workable realization that these are interdependent, and that the success or failure of one means the success or failure of the other. We all are familiar with the truth of this statement also.

Both curative and preventive medicine must be blended into one pattern, or over-all plan of caring for and rehabilitating our people, and making both medical care and hospitalization available to all who need them regardless of their economic, or wage-earning status—and regardless of their religion, color, or social status. The whole is made up of its parts in humanity, as well as in mathematics dealing with inanimate objects. Medicine and public health must adhere to an intense love for humanity as their motivating power. Without that God-given virtue, we would all fall far short of achieving the aims of the noble profession to which we have dedicated ourselves as travelers over this mundane sphere.

Our motto should be "service before self."

Cooperation Necessary

And so must our body politic, through its chosen representatives, be advertent to the needs of humanity, if we are to emerge into those higher realms of usefulness, based on the inescapable fact that, no matter what our argument may be, we are our brother's keeper. I have expressed this conviction throughout my years in the practice of medicine and as State Health Officer, and I restate it now, in this post-war period, when adjustments are being made in the hope of freeing humanity from those things that have meant physical, mental, and spiritual enslavement.

I have often referred to the various Legislative bodies—Federal, State and Local—as entities, and this, possibly, is as it should be, for I am a firm believer in local and community self-government, in so far as the interests of one section do not conflict with the basic rights or interests of another.

While the several Legislative bodies to which I have referred, function under the regulatory statutes that govern them—after all this is a country of laws, not men—yet all these bodies

are primarily interested in the moral, mental, physical and economic well-being of their constituents—that is, in the citizenship in its entirety and in all relationships. This, added up, means the health of the citizens.

To maintain their entities, and to grow in usefulness, they must act in partnership with other agencies dedicated to the same principles, whether they be Federal, State or Local. They must act with unanimity, and must be free from petty jealousies and from a single veto power. A minority group should never control.

Funds coming from the three sources and appropriated for a common purpose should be administered by the agency to which the money was appropriated, for the common good, whether dispersed among needy groups or utilized for mass protection. Such funds should not be controlled by a veto of any one of the agencies to which reference has been made. That is to say, for example, that money appropriated and allocated by Federal agencies for State or local purposes should never be allowed to revert, unused, through arbitrary or negative action on the part of any State or Local Law-making, or regulatory, body. This is penny-wise and pound foolish." It is good economy to spend a dime to get a dollar—but what logic is there in the principle of rejecting a good horse rather than buy a bridle

It was apparent in the Legislature recently adjourned that any bill—even though as vital to the State's well-being as that which called for a uniform and safe standard for milk, which provided for State supervision in case of violation, was promptly killed. Is that as it should be? Is that democratic? Does it reflect the voice of the people, or the influence of pressure groups? "Expediency" is the one thing of which we should be delivered in this critical day, when humanity needs so much.

Our own Legislature has adjourned sine die, and, in all probability, for two years, leaving unpassed not only the uniform milk bill, giving the State Board of Health the duty of protecting all the people of the State against milk-borne diseases, but also other measures, which, under the pretext of avoiding "bureaucracy," yielded to pressure groups. This was especially true of the uniform milk bill which never got out of committee and which, under the rules of the Legislature, was never given the opportunity of being debated on the floor of either branch.

Short-Sighted "Expediency"

While the Legislature did give us $175,000 a year in place of the requested $350,000 to carry on an adequate venereal disease program, this was a curtailment. Not a penny was appropriated for nutrition. The committee turned thumbs down on a measure that would have provided for the sanitary regulation of swimming pools, and with equal secretiveness and lack of open debate, the bill for supervision of water and sewage treatment plants suffered a premature death, as did that dealing with sanitation in our public schools.

Therefore, my colleagues of the medical profession, YOU are faced with a definite responsibility. You must join hands with the practioners of preventive medicine in the mass protection of our people. The State Board of Health was born of your wisdom and has been nurtured by your support, given through those you have elected to serve on the State Board of Health. Yours is the responsibility of helping to educate those of the communities in which you serve in the necessity of safe milk and the other things which the Legislature turned down for the sake of "expediency," hiding behind the skirt of "bureaucracy," which has never existed in the State Board of Health and which never will, I am convinced. This organization is dedicated to much higher purposes than that of seeking

to impose its will arbitrarily upon the people, in any effort to stifle local self-government.

We Must Conquer "Pressure Groups"

We must envisage a future in which pressure groups will have no place, when operating in conflict with the common good and with mass protection. In our home communities is where we wield our greatest power. We should use this power by sending men to the Legislature who will not yield to pressure groups, and who will not pigeonhole or block the passage of measures designed to benefit all people, in every section of the State. If our foresight in choosing our representatives were as keen as our hindsight in appraising their shortcomings, this would be a distinct contribution to progress—certainly to Public Health progress in North Carolina. It behooves us to bestir ourselves, individually and collectively, to make this State free to engage in constructive efforts which will serve all our people and not simply minority groups, whose interests certainly can never counterbalance those of the entire population.

We have extensive Federal grants coming into North Carolina, unhampered, which are reverting, for lack of coordination and cooperation in compensation. We are unable to employ qualified personnel, when the money would be available, because of arbitrary rulings and an unwillingness to allow rates of pay commensurate with the services of those whose talents might be available to us. There must be some way found to correct this deficiency.

We Must Adjust Our Thinking

We must adjust our thinking. We must realize that health is our greatest asset; that it is purchasable, and that, in financing it, we are following the path of economy. It is far more economical to make investments in health, than to save our paltry dollars to sacrifice on the altar of sickness. We must become personally interested in this matter. We, constituting the medical mind, must guide and direct. We must take the lead, or we will find ourselves following others down the path to physical decadence. By taking the lead, we will be benefited instead of being enslaved.

There is a close fraternal relationship between the United States Public Health Service—the principal Federal Government Agency with which we have to deal—and the State agencies, and on down through the local agencies. All this, without dictation from the Federal Government, as to the use of funds in approved plans.

To keep this close relationship, there should be a reciprocal relationship coming out of State and local agencies. All of us pay taxes—Federal, State and Local, and it is destructive to our public health structure, as well as expensive, to see funds revert to other states because we have not the broad vision and foresight to utilize them. It is, I say, "penny wise and pound foolish," and a policy that can find no measure of justification among those who believe in progress.

I shall not attempt, in this brief message, to enumerate the various activities of your State Board of Health in detail, as these will be filed with you for your leisurely perusal and study, and later given to The Health Bulletin, which your Board publishes monthly, in the interest of the people of North Carolina, in their relation to Public Health. These facts, which are chronicled in detail for your information, will be at the disposal of more than 60,000 readers of The Health Bulletin.

I believe that the rank and file of our people are conscious of their medical needs and appreciate their importance as basic in life's plan. I think this was fully demonstrated in the past Legislature when, no matter what the views of the Legislators might have

been as individuals, they, as representatives of a free insistent ,people were forced to ignore the pleas of the minority group, which made a desperate but vain effort to scuttle it, and passed the hospital and medical care program which had been worked out by some of the best minds in our State. This was, indeed a forward step; and if those who saw, for example, the need for uniform standards in providing safe milk for our people could have mustered sufficient strength and interest, there would have been a different story to tell. Instead of the black chapter of defeat that was written by a legislative committee, the story would have been one of glowing triumph for those fighting for the babies, the aged, the ill—and other consumers of milk in North Carolina.

We Must Face the East

We must turn our faces to the east; we must face the rising sun of the new day upon which we are entering, with faith, and courage and hope—and if we are defeated—God forbid—then we must go down fighting. That has been my message during the years that I have served as your State Health Officer; that is my message today. Away with appeasement, fear and all such things that hamper progress. We must look ahead; we must profit by past mistakes, and we must turn past defeats into victory for the future.

Respectfully submitted,
Carl V. Reynolds, M. D.,
Secretary and State Health Officer

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DEPARTMENT REPORTS

DIVISION OF PREVENTIVE MEDICINE

Dr. C. M. Cooper, Director

The principal thing to be said in connection with the official report of work done by the Division of Preventive Medicine, which includes the activities of the Maternal and Child Health Service, the EMIC Program for maternity care of the wives of servicemen and their babies under a year of age, the supply of certain biologicals provided from Children's Bureau funds to all local health departments who desire to use it, the Crippled Children's Service of the State Board of Health, and the distribution service provided by the mailing room of the Board, is that the department has operated without adequate professional personnel, but it has carried on a full and complete volume of work. Despite the fact that we have had no professional help except the services of an obstetrician for just a few months of this year, the efficiency of the office organization has enabled the department to function with a high degree of efficiency. The tabulated reports as to the volume of work done, which follows, indicates the character and scope of activities. It will be noted that nearly a million dollars have been expended in the EMIC program alone. Evidence coming from all sections of the State indicates that this intricate and complicated program has been administered with a high degree of satisfaction. All hospitals, including private clinics of physicians, in the State with the exception of only three hospitals in the fifty bed capacity group have participated in the program. Doctors and hospital management everywhere have cooperated to extend this service on a satisfactory basis to the wives and babies of servicemen.

The Director of the Division has been the only physician connected with the service at the State Board of Health level, with one brief exception during the year. It has necessitated curtailment of some field work and required constant attention to routine on the part of the Director, but as stated above, with an efficient organization, the work has not materially suffered. Every effort during the year was made

to obtain the services of a qualified obstetrician and at least two qualified pediatricians for services in the department. The salaries allowed, however, by the State schedule was not sufficient to induce qualified physicians to seek or accept such service.

In 1946 the infant death rate in North Carolina was only 37.9 per thousand live births, and there were only 2 maternal deaths per thousand live births. The most material reduction in both infant and maternal mortality has been achieved since 1940 and during the administration of the EMIC Program. Hospital births have increased from about 15 per hundred live births to more than 50 in the general population. Of the group of maternity patients who were cared for under EMIC, the latest estimate is that about 87 per cent were delivered in hospitals. The most significant fact, however, is that in 1945, 95.9 per cent of all the white women who gave birth to babies were attended by physicians. In the same year 57.4 per cent of all the Negro women were attended by physicians. The number of midwives at work in North Carolina has been reduced from 9,000 in 1917 at the time of the first registration of midwives, to about 2,000 at the present time, many of them doing little work during a year.

A detailed report of the EMIC program for the year 1946 follows:

Maternity cases completed	9223
Attended at delivery by doctors of medicine	8993
Attended at delivery by interns and midwives	230
Delivered in hospitals	8361
Delivered in homes	862
Infant cases completed	1387

Cost:

Maternity cases	$782,262.67
Infant cases	109,304.89
Total cost	891,567.56

In the normal activities of the Maternal and Child Health Service, 2242 clinics were held in 60 counties and 4 cities conducted by 135 physicians, and attended by:

	White	Colored	Indian	Total
Prenatal patients	631	7179	47	7857
Postpartum patients	275	1961	6	2242
Infants	1652	5548	10	7210
Preschool children	1628	2741	4	4373

35,521 pieces of literature, including Prenatal Care, Infant Care, the Health Bulletin and other miscellaneous special literature were distributed in the M & I clinics.

Crippled Children's Work. The clinics conducted by this department in cooperation with the Vocational Rehabilitation Department of the State Department of Education, and cooperating with the State Orthopedic Clinic at Gastonia on a weekly basis and the State clinic at Goldsboro on a monthly basis, covered about twenty-two points in the State at not less than monthly intervals. The clinics were open to any children under 21 years of age for a free orthopedic examination by the clinician in charge. 9,814 children visited the 236 clinics conducted during the year 1946. The total number of children under hospital care during the year was 1,311. 1,103 were discharged from hospitals following treatment. At the end of the year there were 25,040 children on the State register. There were 455 outstanding authorizations for hospital and medical service of children approved for the treatment but for many reasons were not admitted to service, sometimes because of lack of available hospital beds, etc. On the same date, December 31, 1946, there were 436 additional applications pending.

For the fiscal year ended June 30, 1947, the United States Children's Bureau has allocated $206,062.

Mailing Room. In the field of health education, 1,404,270 pieces of literature were distributed. 30,002 prenatal literature, 102,823 infant literature, and 45,868 miscellaneous supplies were distributed in the maternity and infancy

department, in addition to 7,655 miscellaneous midwife supplies, and 23,445 EMIC forms.

The Multilith Department is efficiently meeting the increasing demands for printing by all the divisions of the State Board of Health, with a staff of two multilith operators.

* * *

DIVISION OF LOCAL HEALTH ADMINISTRATION

Dr. R. E. Fox, Director

At this time, ninety-four of the one hundred counties in North Carolina have some type of local health service, Lee County being the ninety-fourth which voted to establish local health service effective July 1, 1946. The service being rendered in the ninety-four counties is not operating on a full-staff basis because of shortage of professional personnel, particularly physicians and nurses. As of December 31, 1946 there were 909 budgeted positions with 115 vacancies. Of this number, fifteen were health officer vacancies and fifty were public health nursing vacancies.

At the end of 1946 we had sixty-six local health departments in the State. Of these, sixty-six health departments, there are forty county health departments, twenty-one district departments, and five city departments. On July 1, the War Activities adjunct to local services was discontinued since the emergency occasioned by the war had ceased to exist.

The number of trainees who have been on the trainee payroll during 1946 are as follows:

Health Officer	6
Public Health Nurses	22
Sanitarians	26
P. H. Educators	7
Follow-up Workers	8
Assoc. Bacteriologist	1
Total	70

During the year a Public Health Nursing Manual was developed and distributed as a guide for all public health nursing personnel.

Dr. J. Roy Hege left the Division of Local Health Administration to become the Director of the Divisions of Epidemiology and Vital Statistics as of October, 1946. In August 1946, Dr. William D. Hazlehurst, an Officer of the Public Health Service on loan to North Carolina, resigned his position with the Service and left the State Board of Health.

Venereal Disease—During 1946 a Venereal Disease Manual was developed and distributed to all local health departments to serve as a guide as to recommended procedures in treatment schedule for venereal disease cases. The latest treatment schedules were mailed to the members of the medical profession of the State. The program on venereal disease has emphasized largely the treatment of early syphilis in the two rapid treatment centers located in Charlotte and Durham. Private physicians have referred many cases to these centers as well as the various local health departments. During the calendar year 1946, the total admissions to the two centers were 8,346. As of December 31, 1946, since the two centers opened, 23,528 patients had been admitted to the rapid treatment centers. Practically all of the gonorrhea cases have been treated outside of the centers either by private physicians or local health departments. The number of cases of syphilis reported during the year 1946 was 9,261 as compared to 8,125 in 1945. The number of cases of gonorrhea increased from 13,162 in 1945 to 16,082 in 1946. These statistics show that while over a period of the last five years there has been a decrease in the cases of syphilis, in 1946 the actual number of cases increased. There has been a steady rise in the cases of gonorrhea reported to the State Board of Health over a ten-year period, and the increase in 1946 is not

an unusual occurrence. With improved therapeutic measures for gonorrhea, this increase is to be expected. More patients are going to physicians and clinics for treatment since penicillin is available. The average stay of syphilis cases in the rapid treatment centers for the past year has been about eleven days. The patients are being treated on schedules of penicillin, arsenic, and bismuth. Both of the rapid treatment centers in North Carolina are participating in the national study to determine the best schedule of treatment, combining penicillin, arsenic, and bismuth. Some patients have been treated on penicillin alone.

The Public Health Service is conducting a five-year study on the various treatment schedules. This was started in early 1946. At the end of the five-year period, it is hoped that enough patients will have been treated and followed with determinations made as to the clinical analyses, blood serology, and spinal fluid findings to indicate whether or not one schedule has definite advantages over another. This question, as most of you know, is still one subject to very much debate in medical circles. However, I think we are all in agreement that penicillin in the treatment of syphilis has a very definite role and is very superior to the old treatment schedules using the heavy metals exclusively. A word of caution might not be amiss. Some of us become too enthusiastic with reference to schedules utilizing penicillin alone and not give a sufficient dosage. One of the popular schedules for the practitioner of medicine consists of an eight to ten-day treatment, using 1 cc of penicillin in beeswax and oil, 300,000 units daily. Our investigations show that the period of treatment should be extended to possibly sixteen days using the 1cc dose. However, as pointed out before, more research and follow-up study will have to be done before the definite dosage can be determined. More and more emphasis is being placed and should be placed on the finding of infectious cases through contact investigation.

I would like to request that every private physician who has a case of venereal disease inquire of his patient as to the probable source of his infection and if possible, secure the cooperation of the patient in bringing in all possible contacts for examination. We wish to make the point that if the private physician can use in any way the facilities of the local health department in conducting this contact investigation, please get in touch with your local health officer. These matters are confidential matters between the patient, the physician, and the health department. If at any time this confidential relationship is not maintained, it will be appreciated if you will call it to our attention. It is only by utmost cooperation and diligent search for the sources of infection that we can eventually bring these venereal diseases under control. The private physicians can do much in this program.

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VENEREAL DISEASE EDUCATION INSTITUTE

Mr. Capus Waynick, Director

In 1942 the State Board of Health, in cooperation with the U. S. Public Health Service, established the Venereal Disease Education Institute to develop and demonstrate informational devices in the control program. This Institute continued its work during 1946 without change of plan until November 1, at which time the printing and distribution of the materials outside of North Carolina was turned over to the North Carolina Social Hygiene Society, a non-profit agency formed to promote public cooperation in the venereal disease control program.

At the time of the change of plan, a fund, in excess of $80.000 which had

been accumulated by the sale of its materials outside of the State was transferred from the Institute to the support of the clinics under State Aid. The change with respect to the operation of the Institute was inspired by the withdrawal of the Smith Reynolds Foundation support from the control program. The Institute had been producing and distributing materials outside the State with the aid of a gift from the Foundation and through use of that gift had built up the revolving fund which now has been transferred. It is continuing its work limited to research in the use of educational devices.

During the ten months of 1946 in which the Institute continued general distribution of educational materials, it supplied to the field a total of 1,754,880 pieces. This distribution, which went into many states and in some international channels, by months was as follows: January, 92,354; February, 33,648; March, 153,445; April, 659,772; May, 162,838; June, 183,038; July, 52,270; August, 181,945; September, 17,379; October, 217,691.

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FIELD EPIDEMIOLOGICAL STUDY OF SYPHILIS

Dr. John J. Wright, Director

The Field Epidemiological Study of Syphilis has continued to accumulate data to measure the trends of syphilis in Orange, Person, Chatham and Durham Counties and to evaluate the control measures being used in the study area.

An analysis of these data reveals that while the trend in the discovery rate of syphilis among both the white and colored population of the Orange-Person-Chatham Health District was definitely downward from 1941 through 1945 due to the gradual exhaustion of the backlog of latent cases, there was a definite turn upward in both races in 1946. The rate of 0.66 new cases per 1000 among the white population is 24.5% higher than the average discovery rate for the preceding 5 years. The rate of 7.7 per 1000 among the colored population is 33% higher than the preceding 5 year average.

In Durham, the trend in the discovery rate among the white population has been steadily downward for the past five years. Only in 1946 was there no change over the preceding two years .The unchanging total discovery rate of 0.9 per 1000 population among the white population conceals a rise of from 0.5 to 1.1 among the white males and a decline in the discovery rate from 1.3 to 0.7 in the white females. Among the colored population, the discovery rate of 16.9 in the colored males was double the discovery rate among the same group in 1945. The rate of 16.8 among the colored females was 65% higher than among the same group in 1945.

A better index of what is happening in the control of syphilis is the incidence or attack rate—or the number of persons per 1000 population who newly acquire syphilis during the specified year. The trend in the attack rate among the colored population of both the Orange-Person-Chatham Health District and Durham has been definitely upward for the past five years. In 1946, the attack rate among the colored population in the OPC Health District was 4.9, an increase of 145% over the preceding year and of 158% over the average for the preceding 5 years. The increase among the colored males (218.7%) was twice as great as the increase among the colored females (108.7%).

The attack rate among the colored population of Durham of 10.4 for 1946 represents an increase of 117% over the 1945 rate. The same differences among the colored males and females was also noticed in Durham.

The white attack rate of 0.35 for the

OPC Health District represents a decrease of 31% over the 1945 rate but an increase of 52% over the average attack rate for the five year period 1941-1945. Most of this increase was among the white males (122% over the preceding 5 year average). The attack rate among the white females increased 17% over the five year average.

In Durham, the attack rate of 0.28 for the white population represents a 7% decrease over the 1945 rate and a 12% decrease over the average attack rate for the period 1942-1945. This decrease is accounted for by the white females where the rate of 0.07 was 79% less than the preceding four year average. The white male rate of 0.50 represents an increase of 67% over the preceding four year average.

So we must admit that the attack rate of syphilis, for the study area at least, was definitely higher in 1946 for the white and colored males and colored females and lower among the white female population.

A review of each of the cases of syphilis newly acquired in 1946 and diagnosed by the health department clinics in the study area reveals the following three reasons for bring 85% to 100% of all patients with infectious syphilis under treatment: 25% of the colored males with infectious syphilis and 42% of the colored females with infectious syphilis were brought to treatment because they were known contacts of infectious cases; 54% of the colored males and 29% of the colored females came in on their own accord because of suspicion of infection, symptoms, or curiosity and through no direct administrative effort of the clinic; 9% of the colored males and 17% of the females were referred to clinics by private physicians.

Approximately the same percentages hold for the white patients with infectious syphilis although the number of such patients is smaller and therefore less significant.

These three methods: contact investigation; self (which I believe should be specified as "education"); and referral by private physicians, are responsible for the vast majority of admissions of patients with infectious syphilis to our clinics and need very careful evaluation and development to make them even more effective. Each calls for a continuing educational program, the first among clinic personnel to develop techniques; the second among the public with a very careful evaluation to determine effectiveness of materials and methods; and the third, a very careful educational program among physicians to encourage referrals through use of the intensive treatment centers. A very effective work can be carried on in this group if it is carefully planned.

The effectiveness of contact investigation through interviewing of patients with infectious syphilis has been well shown in the Orange, Person, Chatham Health District and in Durham. In 1946 in the study area, 345 colored patients with infectious syphilis named 702 sexual contacts or 2.0 per patient interviewed. Of this number, 558 lived within the jurisdiction of the health departments and 494, or 89%, were examined. Of the 494 examined, 359, or 73%, were found to have syphilis—in 212 of them, the diagnosis was made as a direct result of the epidemiological investigation. Of these 212 newly diagnosed cases, 169, or 80%, were found to be darkfield positive and 41, or 19%, had early latent syphilis and were potentially infectious. There were 62 cases of gonorrhea also found among these contacts. For every colored patient with infectious syphilis admitted to clinics in the area, 1.04 persons with syphilis were found and 0.61 persons were diagnosed for the first time as having syphilis.

That these rather impressive figures on the results of contact investigation can still be improved is shown in

Orange County where in 1946 for every negro case of infectious syphilis admitted to the clinic, 1.2 new cases of infectious syphilis were admitted as a result of contact investigation.

Contact investigation among the white patients is a much less satisfactory method of case finding than among the colored.

For unit of effort involved and because of the changing character of the clinics brought about by the establishment of the Rapid Treatment Centers in the State, the investigation of sexual contacts of known cases offers the most effective method of case finding which will eventually have its effect upon the control of syphilis. A careful objective evaluation and promotion of venereal disease education, and a stimulation of practicing physicians to refer more infectious patients to the Rapid Treatment Centers offer the best hope for the control of syphilis in North Carolina.

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DIVISION OF EPIDEMIOLOGY and VITAL STATISTICS

Dr. C. P. Stevick, Acting Director

The collection and analysis of morbidity and mortality data by the Division of Epidemiology and Vital Statistics during 1946 revealed many interesting features regarding the status of the health of North Carolina's population.

Pulmonary tuberculosis, the leading cause of death among the communicable diseases, was responsible for 1,065 deaths as compared to 1,287 for 1945, thereby establishing a new low. Beginning improvement in tuberculosis case-finding is reflected in the ratio of minimal to advanced cases for 1946 as compared to 1945. Of 1,894 active cases reported during the past year, 15.3 per cent were minimal, 38.0 per cent were moderately advanced, and 46.5 per cent were far advanced. In 1945, 14.7 per cent of the 1,803 active cases reported were minimal, 37.0 per cent were moderately advinced, and 48.3 per cent were far advanced.

Pertussis, another major cause of death among the communicable diseases, showed the lowest number of both cases and deaths in the history of the State, except for the year 1946. Pertussis cases totaled 3,394 and deaths 57.

Diphtheria, the next most important communicable disease insofar as deaths are concerned, caused fewer cases than ever before, but the number of deaths did not drop as low as the previous record. The 1946 cases were 590 in number as compared to 1,375 the previous year and 665 for 1944, the best year on record up to that time. Diphtheria deaths reported to date for 1946 numbered 53 as compared to 35 for 1944.

Typhoid fever continued to decline as a public health problem. Only 54 cases were reported during the past year. Malaria among returning service men has been reported frequently, but there appears to have been no appreciable spread to the civilian population. cases for 1946 totaled 369 as compared to 554 the previous year.

The chief communicable disease problem in the State that might be considered as war-connected is that of syphilis. In 1946 there were reported 2,452 cases of primary and secondary syphilis among males as compared to 1,522 the preceding year. There has been a corresponding increase among females, namely, 2,121 cases for 1946 and 1,550 for 1945. The decline in the number of late cases that has taken place for several years was continued during the past year.

Gonorrhea reports for the white race showed a decline in 1946; however, in the colored race the totals were 10,994 for 1946 and 7,365 for 1945.

Rocky Mountain spotted fever continued a twelve-year upward trend dur-

ing 1946. There were 66 cases and 21 deaths reported.

Endemic typhus fever, which had shown a ten-year upward trend in 1944 and was expected to continue upward in the southeastern United States, has declined in the past two years.

One new communicable disease problem made its appearance in this State during 1946. An outbreak of epidemic ringworm of the scalp was called to the attention of health officials in Alamance County by Dr. Callaway of Duke Hospital. Approximately 300 cases of this disease have been located in the area.

A control program is being carried out through the cooperation of the local medical society, public schools, barbers, and health department.

A survey is being carried out in the larger centers of population to determine the prevalence of this condition in other areas so that if necessary measures can be instituted in an attempt to prevent the occurrence of other localized epidemics. Up to the present time the problem in the cities surveyed is predominantly in the colored population.

The past year brought a record number of births; preliminary estimates give a total of well over 100,000. The birth rate of 26.3 per 1000 population is the highest recorded since 1928. The crude death rate of 7.6 deaths per 1000 population is the lowest ever recorded in North Carolina.

The maternal and infant death rates have both continued to decline.

The ten leading causes of death for 1946 show no change over 1945 and are as follows:

1. Heart disease
2. Intracranial vascular lesions
3. Nephritis
4. Cancer
5. Congenital malformations, prematurity, and neonatal diseases
6. Pneumonia
7. Violent deaths and non-vehicular accidents
8. Pulmonary tuberculosis
9. Automobile accidents
10. Other diseases of the digestive system.

In addition to the collection and analysis of routine statistical data and the preparation of the standard reports, the Division carried out several surveys and statistical projects and gave assistance to a large number of applicants for statistical information.

Field work with local public health personnel for the purpose of strengthening the communicable disease program has been continued.

The Malaria Control Unit of this Division continued the blood slide survey that has been in progress for a period of years. A total of 13,309 slides were taken from children in the first six grades of school in three counties in the malarious section of the State. The survey was conducted in areas not previously visited. The U. S. Public Health Service laboratory in Atlanta accepted 10,000 slides for examination. The reports are not yet available from this group. From that part of the remaining group of slides examined to date in our own laboratory, no positive cases have been found.

A further increase took place in the construction of new ponds. This was chiefly due to the activity of the Soil Conservation Service in the promotion of pond construction for fish, soil erosion, and other purposes. The Soil Conservation Service cooperated with the North Carolina State Board of Health by requiring the person planning to build a pond to obtain a permit from us before they would participate. Inspections were made by this unit of 334 proposed pond sites. Numerous routine inspections were made of existing ponds.

With forces, equipment, and materials provided by the U. S. Public Health Service, a much larger DDT residual

spraying program than that conducted last year was carried on in areas proven to be malarious by positive blood smears or other means. Attempts were made to spray the home of each discharged service man who had a malaria history. A total of 40,683 homes was sprayed with DDT during the year. Funds have been provided by the U. S. Public Health Service to continue this program during 1947.

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DIVISION OF SANITARY ENGINEERING

Mr. J. M. Jarrett, Director

Introduction—The following is a brief summary of the work done by the Division of Sanitary Engineering during the calendar year 1946. It is not possible in a brief report of this nature to cover in sufficient detail the accomplishments in the various activities carried on by this Division. For purposes of brevity, we have divided the activities into the various groups which function in this office and have summarized numerically the inspections and visits relating to those main activities.

Administration—The organization of the Division during the year followed as closely as possible the administrative practices set up when the Division was reorganized in the fall of 1943. Our greatest administrative problem continued to be more competent, qualified personnel. During the year, we had turnover of our personnel on numerous occasions which interfered with the efficient functioning of the office, and, consequently, with the results obtained. During this period, we had four resignations of our stenographic staff, which meant that we had five new employees during the year who had to be trained, We also lost one of our district engineers, and his position was vacant for several months until we were successful in securing the services of a replacement. We had two sanitarians return from military service, and secured one additional sanitarian for the bedding program. We also had two resignations in the sanitation field. These resignations and employment problems consumed considerable time of the Director in trying to keep the program working with an undermanned staff.

During the year, we had numerous conferences with various State officials, particularly in the Department of Agriculture, the Department of Labor, the Department of Education, and the Budget Bureau. Several trips were made out of the State in connection with programs financed or sponsored by the U. S. Public Health Service. The problem of training personnel for local health departments has required considerable attention, and one such trip was made by the Director and Dr. Richardson for the purpose of observing the operation of the Public Health Service Training School in Atlanta, with the idea in mind of possibly establishing a similar training course in this State for North Carolina personnel.

Much time was spent by men in the various units studying and making improved revisions in our regulations relating to public water supplies and sewerage systems and our sanitation laws. Many of these regulations are now in the process of being revised, and it is hoped that during the coming year we will be able to straighten out this particular phase of our program which needs serious consideration.

A mobile laboratory was consturcted and completely equipped to do water, sewage, and milk analyses, but has not been placed in operation because of no personnel or funds to operate it.

Engineering—During the year, an enginer was assigned to this office from the Public Health Service to assist in a postwar planning survey. This survey included all towns of any size for the purpose of determinging their needs with regard to water and sewerage fac-

ilities and garbage disposal. Rural areas were surveyed to determine the need for sanitary privies, water supplies, and other sanitation safeguards. This work was directed from the Richmond Office of the Public Health Service and reports have been forwarded to this office of the surveys completed.

The Public Health Service also assigned an engineer to North Carolina for several months in connection with the disposal of surplus government property. This program was very ineffective, consumed a lot of time and expense, and proved to be of little value to the State and the municipalities. Although surplus property was available, it was almost impossible for the State or the towns and cities in the State to secure this property.

During the year a cooperative program with the U. S. Geological Survey was inaugurated, at which time a water laboratory was moved from State College to the State Laboratory of Hygiene. Work actually began in the laboratory in January and this program is proving to be very beneficial to this office. Complete chemical analyses are being made of all public water supplies.

Two sanitary districts—one at Spray and an extension of an existing district at Hendersonville — were established during the year.

One of the most important activities in the field of engineering was in connection with stream sanitation work. Through the services of a temporary engineer, we were able to make a survey of the Neuse River, and later through cooperation with the State Stream Sanitation and Conservation Committee, a survey was made of all pollution throughout the State and a report prepared for presentation to the Governor and the Legislature.

The engineers were quite active in the program in cooperation with the State Planning Board and municipalities in the advance planning of public works through the Federal Works Administration program. Quite a number of towns are now making plans and having surveys made for the purpose of constructing or extending water supply and sewerage systems. All of these requests must be investigated and approved by this office before funds for advance planning are advanced by the Federal Works Agency. This required a considerable amount of time on the part of the engineers. During 1946, we had over six million dollars in water improvements and over six million dollars in sewerage improvements submitted to this office. These requests carry approximately five hundred thousand dollars for advanced engineering services. The total number of projects now under consideration since April 1944 amounts to over $10,000,000 for water and $12,000,000 for sewerage and $700,000 for engineering services. Details are contained in the numerical summary.

Insofar as possible, routine work was carried on in connection with public water and sewerage systems, and industrial waste plants. A tabulation of the number of visits is included in the general numerical tabulation. Because of the demands being made on this division by municipalities and interested persons for engineering assistance in connection with special sanitary engineering problems, it was not possible to carry on the amount of routine work —inspections—which should have been made. This condition can only be corrected by the addition of sanitary engineers to the staff, or else by a reduction in service to those requesting it.

Sanitation—One of the most outstanding and valuable pieces of work which has been done in connection with the sanitation of public eating places has been the assistance given to owners and operators of foodhandling places in helping them prepare plans and layouts for equipment. It is estimated that during the past two years, there has been over ten million dollars

spent in the State in new buildings, renovation of old buildings, and for the purchase of equipment in public eating places. We have felt that such a program was definitely worthwhile as it enabled us to secure for these places the proper kind of equipment, proper installation and arrangement of equipment, which should make for better operation and maintenance standards in the future.

Another piece of work of importance was preparation of a bulletin regarding sanitation in schools, which was prepared jointly by the State Department of Education and the State Board of Health. This bulletin as I understand is to be printed by the State Department of Education, but it has not yet been published. It will be used in the schools in teaching sanitation, and also as a guide to principals and others concerning the items of sanitation which should be given attention at their particular schools.

Attention was given various Health Officers in connection with request for special surveys. One complete survey was made of all school lunchrooms in Rowan County at the request of Dr. Armstrong. Another survey was made of all schools in Craven County at the request of the Parent-Teachers' Association.

Considerable attention was given to the various groups interested in regulations which we prepare. Conferences were, therefore, held with the operators of the places in question in order that we might straighten out any differences of opinion before regulations were adopted. Such conferences were held with summer camp operators, frozen food locker plant operators, the North Carolina Association of Meat Packing Plant and Dealers, the North Carolina Oil Jobbers' Association, and the North Carolina Hospital Association. We believe that this approach to the problem of preparing regulations will make for better cooperation among the various industries concerned and also gives us the benefit of the thinking and suggestions from men actively engaged in the various businesses.

Time was spent in connection with Federal programs relating to sanitation, such as migratory labor camps, under the administration of the Farm Security Administration. This program has been very unsatisfactory from its inauguration. Considerable difficulties were also experienced in connection with OPA meat regulations as this program interfered considerably with our program of sanitation in meat markets and abattoirs.

Considerable time was devoted by all sanitation personnel in the field training of sanitarians for local health units.

Milk—The milk office has, as stated on other occasions, suffered more during the past few years than any other unit of work. At one time during 1946, we had only one man assigned to milk activities, he being a transfer from the U. S. Public Health Service. At the present time, three men are employed—one engineer and two sanitarians. These three men find it impossible to cover the entire State and handle the problems which are brought to our attention. Personnel which had been assigned to the State by the Public Health Service was transferred during the year.

Beginning July 1, the office was reorganized and a policy adopted of trying to approach the industry, work with the various groups concerned, and see what could be worked out in connection with milk.

The sanitation of milk supplies in the State is unquestionably at the lowest point it has been in the last ten years. A short-form survey was started in July at the suggestion of the Public Health Service Office of Milk and Food Control, and we have been able to gather considerable information regarding the activities of the local health departments relative to milk. We find

in almost every case a lack of standard interpretation and enforcement of local ordinances. We believe that this one thing has created most of the confusion which exist today in the milk industry.

Personnel problems also caused considerable worry in connection with the milk laboratory program at Lexington. Three different technicians were employed during the year, two of them remaining only a short while. Consequently, for a greater number of months during the year, the laboratory was not able to function except what work as could be done by the local sanitarians assigned to the Davidson County Health Department. We now have a man in this position who seems to be satisfied, and it is hoped that we can keep him long enough to accomplish something.

School milk supplies came in for considerable attention during the year, quite a number of complaints being received from schools and from the Federal Agency assisting in the school milk program or the child feeding program in schools.

Plans were laid during the year for the introduction of a bill in the 1947 Legislature establishing minimum standards for the sanitation of milk supplies, to be State-wide and under the control of the State Board of Health.

Typhus Fever—The typhus fever control program was drastically reduced on July 1 by the Public Health Service. This reduction of funds which amounted to two-thirds of what we had received the previous year made it necessary that our activities be greatly reduced, and, consequently, we were not able to expand this program in line with the requests for it and as the situation demanded. We were successful in continuing some epidemiological studies which were started which have proved very interesting. In one or two towns where this survey has continued, it was noted that following the establishment of DDT dusting as a control measure that the number of cases of typhus dropped quickly and markedly; the number of rats trapped and blood samples examined showed a great reduction in positive rats, as was also the case in the number of fleas combed from the rats. This survey is being continued, but on the basis of work done it appears that DDT dusting is a very effective measure in the control of endemic typhus.

Ratproofing programs were carried on in a number of towns as shown in the general summary.

Bedding—This program has been carried on in a routine manner, the same as in the years past. As mentioned above, one additional sanitarian was employed to assist in this work and to fill a vacancy which had existed for two or three years.

* * *

NUMERICAL SUMMARY OF ACTIVITIES

Sanitation:

Food Handling Places (cafes-lunch and drink stands-restaurants)	2689
Meat Markets and other Meat Handling Places (locker and packing plants)	1068
Abattoirs	263
Hotels (tourist homes-tourist camps)	219
Private Institutions (schools-hospitals-sanatoriums)	75
Public Institutions (State and County institutions-jails-prison camps	75
Summer Camps	50
Private Water Supplies	59
Private Sewage Disposal (septic tanks-privies)	314
Complaints, Special Investigations and Misc.	160
Schools (not including lunch rooms)	66
School Lunch Rooms	134
Bus Stations	18

Cafe and Hotel plans prepared and reviewed 121

Engineering:

Plans Reviewed (water and sewerage) 94
Plans Approved 74
Plans Prepared for Distribution 63
Public Water Supplies 316
Public Sewage Disposal (plants or systems) 185
Institutional Water Systems 45
Institutional Sewerage Systems 60
Abattoir—Design and Location 115
Private Sewage Disposal 52
Swimming Pools 34
Shellfish Plants 775
Water Samples Collected and Analyzed (shellfish) 340
Water Samples Collected (other) 18
F.H.A. Applications Processed 140
Special Investigations—Water, Sewerage—Industrial Waste 111
Railroad Watering Points Inspected 57
F.W.A. Advance Planning—Water and Sewerage—4-1-44 to 12-31-46

Water Works

	Applications	Amount	Advance Requested
Improvements	42	$10,790,829	$364,149
Sewerage			
Improvements	49	12,532,009	370,452
Total	91	23,322,838	734,591

Milk:

Dairies Inspected 654
Milk Plants Inspected 234
Surveys Completed 77
Laboratory Visits 40
Milk Samples Collected for Analysis 91
Special Investigations 21
Plans Reviewed or Approved 31

Typhus:

Ratproofing:

Towns	Buildings	Amt. Spent
6	655	$64,781.13

DDT Dusting:

Towns	Premises Dusted	DDT Used
5	50,618	84,093 lbs.

Bedding:

Retail Places Inspected 2067
Manufacturing Plants Inspected 2588
Pieces of Bedding Condemned 5769

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DIVISION OF ORAL HYGIENE

Dr. E. A. Branch, Director

Steadfastness of purpose and perseverence characterize the spirit manifested by the Division of Oral Hygiene in its public health endeavor. In spite of the misfortunes of war and the confusion of the post-war period the main objective of the program is kept ever in mind and before the public. This objective is—**the prevention of dental defects and of diseases of dental origin through education and through the early detection and correction of dental defects.**

The program is necessarily directed, primarily, to children under thirteen years of age. The modus operandi is the same that has been followed for some years: the school dentists go into the schools, into the classrooms in fact, and teach mouth health, make oral inspections for all children and dental corrections for the under-privileged, and refer the others to their own dentists for examinations and treatment.

This sounds like the perfect set-up and, indeed, we know that the plan works smoothly. However, it cannot function without dentists, and therein lies our weakness. At the present time the size of the staff is woefully inadequate. There are now only seven school dentists as compared with thirty-four in 1942. This is unfortunate for the children of North Carolina. They are the ones who are suffering, who are the innocent victims of the situation.

As yet we have not been able to recruit school dentists to replace those who went into the Service and into private practice. However, the Division has continued its educational program in the schools and as much corrective work as has been possible with the small staff. No county or school has re-

ceived as much service as was needed and many have not been reached at all.

The prospects now are that we will be able to increase the salaries of the school dentists to a level that will be more attractive than it has been for the last few years. If so, we believe that we will be able to secure young graduates who will be willing to work at least two years in order to take advantage of the experience and special training that this work affords.

The picture is not entirely dark and discouraging. Study and comparisons of our records bring to light evidences that the activity is getting results. For instnce, there is a marked drop in the proportionate number of six year molars extracted last year from the number extracted ten years ago. Verbal reports from dentists in private practice are to the effect that, following the schools dentists' visits in their communities, many referred children come to their offices for treatment. The expressions of public approval and the increasing demand for the service reflect the worth of the activity. This is indeed one phase of our public health program that has passed the test of winning the approbation of "the man in the street."

Since our last report we have conducted mouth health programs in 377 schools and have made dental corrections for 20,703 under-privileged children. We hope that next year the figures in this report will, at the least, be doubled.

* * *

STATE LABORATORY OF HYGIENE

Dr. John H. Hamilton, Director

In compiling reports to you for the State Laboratory of Hygiene, we have, since 1941, found it necessary to explain decreases in the volume of work performed by the Laboratory. For the year, 1946, no such explanation is necessary. Practically all of the numerous services which the laboratory renders to the medical profession and to the health program are now back to prewar levels.

During 1941 a new record for service was established by the State Laboratory of Hygiene. We are, therefore, using it as a yardstick in presenting our report for the past year.

Of specimens examined, serological tests for syphilis far out number all others. In 1946—403,409 serological tests for syphilis were performed on our civilian population in comparison with 419,240 in 1941. The sanitary examination of specimens of water was the first laboratory procedure inaugurated by the State Laboratory of Hygiene in 1908. In 1946—8,063 specimens were examined—in 1941, 7,126.

The number of examinations for our civilian population in 1941 totaled 509,-638. In 1946 the total was 484,068. We are, therefore, virtually within striking distance of our 1941 record so far as the examination of specimens is concerned and can state that 1946 was a good year in the history of the laboratory's record of service.

As laboratory aids in the diagnosis of typhoid fever, 3,097 blood cultures were made with the typhoid organisms being found in 34. An even 1000 cultures were made for typhoid bacillus in feces and urine, from which the organism was isolated in 55 instances. The agglutination tests performed for typhoid fever numbered 3,880. The agglutination test for undulant fever was performed on 3,179 specimens. The greatest number of agglutination tests were requested for endemic typhus, and Rocky Mountain Spotted Fever for which the Weil Felix test was performed 6,346 times.

There was a considerable increase in the requests for examinations for tularemia—2,468 being made. The increase in the prevalence of this disease is shown in the fact that the laboratory aided in the diagnosis of 77 cases.

Rabies, an ever present source of

concern in the State, was responsible for the examination of 921 animal heads, 322 of which showed evidence of rabies.

The year, 1946, brought forth the largest epidemic of diphtheria which the State has experienced in several years. Among the procedures used in dealing with this increase in diphtheria is the laboratory examination of throat cultures—4,515 in number—in which typical organisms were found in 438, approximately ten per cent of the specimens examined.

Microscopic examinations were made on 14,428 urethal smears for gonorrhea. Typical organisms were found in 2,032 of these. In addition, 1,642 cultures for gonorrhea were made by the delayed culture method. Characteristic organisms were isolated in 421.

Specimens of sputum numbering 8,680 were examined for tuberculosis.

Ten thousand one hundred three examinations were made for Vincents Angina.

For intestinal parasites 8,673 specimens were examined. Some form of intestinal parasite was found in 1,310 of these.

One hundred sixty-four specimens of spinal fluid were examined for meningitis.

There were 1,411 miscellaneous examinations made.

Large quantities of biological products were distributed during the year 1946. Typhoid vaccine in the amount of 517,260 cc was sent out.

Enough smallpox vaccine was distributed to protect 299,153 people.

The improved Pertussis Vaccine in quantities sufficient to immunize 40,548 children was sent out and enough diphtheria toxoid to immunize 78,000 was sent from the laboratory to physicians and health departments.

We must reluctantly admit, however, that it was necessary to send out enough diphtheria antitoxin to treat 2,818.

There were 798 antirabic treatments supplied by the Laboratory during the year.

Orders for 1,648 immunizing doses of Tetanus Antitoxin were received and 68 - 10,000 unit packages for the treatment of Tetanus. 3,200 cc of Tetanus Toxoid were distributed.

There has been an increasing demand for Combined Diphtheria and Tetanus Toxoid—10,520 cc being distributed.

Combined Pertussis Vaccine and Diphtheria Toxoid was distributed in the amount of 52,980 cc.

For the attenuation and prevention of measles the American Red Cross has supplied the laboratory with Immune Serum Globulin Human, free of charge, with the understanding that this material be made available without cost to the children of the State; 14,965 cc of this material was distributed by the laboratory during 1946.

The American Red Cross has also been generous in supplying dried blood plasma of which we have distributed 2,029 of the 250 cc packages and 5,722 of the 500 cc packages. This plasma has been delivered to the laboratory free of charge and has been sent to physicians and hospitals throughout the State with the understanding that they make no charge for the product. Physicians, however, may make a charge for the administration of either the plasma or the Immune Globulin.

Another biological product, Rocky Mountain Spotted Fever Vaccine, has been made available to the Laboratory without cost by the National Institute of Health; 1,450 cc of this vaccine were distributed in 1946.

During the year the State Laboratory of Hygiene participated in the Evaluation Study of Serologic Tests for Syphilis conducted by the Advisory Committee of the United States Public Health Service. Our Kline test in this study gave a sensitivity rating of 88.9%. The control laboratory had a sensitivity rating of 81.9%. Our Kline specificity

rating was 98.9 and the control laboratory was 100%. Our Eagle complement fixation test gave a sensitivity rating of 71.7% and a specificity rating of 99.3% compared to 80.4 and 100% in the control laboratory.

We have continued to conduct evaluation tests for the laboratories within the State which have been approved for the making of serologic tests for syphilis under the Marriage Law. The performance of these laboratories has improved considerably. Their number has increased to rather unwieldy proportions, approximately 80 now being on the approved list.

The Laboratory Farm has continued to be a very helpful part of our Institution. In addition to making possible the production of biological products which we could not otherwise prepare, it has enabled us to solve our small animal problem.

The Water Chemistry Laboratory, operated by the United States Geological Survey in cooperation with the Department of Conservation and Development and the State Board of Health, is now housed in the Laboratory Building. This laboratory is making satisfactory progress towards its goal of a complete chemical examination of every public water supply in the State as well as of numerous raw water sources.

Several special studies are now underway. Reports from them will probably appear during the year 1947.

Our personnel problem was acute throughout the year and will probably be a perplexing problem for a considerable period of time. It is hoped that a plan can be evolved which will expedite the training of laboratory workers.

Although there is much to do and many perplexing problems to face, the staff of the State Laboratory of Hygiene faces the future with courage and confidence that the traditions of the Institution for rendering worthwhile service will be maintained.

* * *

SCHOOL-HEALTH COORDINATING SERVICE

Dr. C. P. Stevick, Director

The School-Health Coordinating Service is an administrative unit of the State Department of Public Instruction and the State Board of Health designed to promote the development and execution of a program of health education and health service in the public schools of North Carolina.

The staff consists of a co-director, Mr. Charles E. Spencer, representing the State Department of Public Instruction, and a co-director, Dr. C. P. Stevick, for the State Board of Health. The remainder of the white staff includes three nurses, a physical education specialist, a health educator and a nutritionist. The negro personnel includes a physician, a nurse, a health educator and a nutritionist.

The health service phase of the program has been organized to achieve three objectives: (1) To find school children with health problems and arrange for their correction. (2) To establish as healthful an environment as possible to protect the health of the school population. (3) To promote the use of health services as teaching aids in health education.

The health education activities are directed toward the establishment of adequate health and physical education instruction of school children so that they will develop the habits, attitudes and understanding necessary to avoid the more important lifetime health hazards and to maintain themselves at a high level of general physical and mental health.

The use in every way possible of modern methods in teaching health is stressed. It is felt that the most effective health teaching is done by means of educational experiences such as are provided by adequate health

service. For this latter reason teacher participation in as many health services as possible is urged as an integral part of health instruction.

The School-Health Coordinating Service carries out the above program by consultation with school and health department personnel, and by in-service training course and summer schools for teachers.

During the first part of 1946 the staff of the School-Health Coordinating Service worked in Mecklenburg, Cabarrus, and Gaston Counties. In these areas a permanent plan was organized for teacher inspection of school children with medical examination of those having possible defects. A permanent audiometer testing program was instituted in Mecklenburg County.

In regard to the teacher inspection and medical examination phase of the work an example of the results obtained is given by the following information for Mecklenburg County:

Teachers instructed in the inspec-spection procedure	259
Children inspected	8,349
Children referred for examination (approximately 25%)	2,196
Defects found (Includes defects of ears, eyes, nutrition, posture, skin, teeth, throat, nose, speech, and behavior)	3,755

The hearing conservation work included instruction of the city and county health department nurses in the use of the audiometer, the medical follow-up of children with hearing defects, and the special education necessary for such children.

As an example of the results of the inspection and the examination program the following figures also for Mecklenburg County are of interest:

Children tested	2,127
Children referred for medical care (approximately 9%)	199

Of the children with hearing defects 59 were referred for special attention in classroom seating, 7 for lip reading instruction, 5 for speech correction, 5 for instruction in the use of a hearing aid, and 2 for vocational guidance.

In-service training for teachers in the above counties included physical education, nutrition, and health instruction in child observation for physical defects.

In the summer of 1946 during the annual summer school given by the School-Health Coordinating Service with the financial assistance of the North Carolina League for Crippled Children and the North Carolina Tuberculosis Association, 41 teachers attended the courses at the University at Chapel Hill and 43 at the North Carolina College for Negroes at Durham. The subjects covered by the instruction included Methods and Materials for Health Instruction, Personal Hygiene, and Community Hygiene.

In the fall of 1946 the Service initiated programs in Davie, Yadkin, Stokes, Rowan and Rockingham counties with follow-up activities in Gaston, Mecklenburg and Cabarrus counties. In the spring of 1947 certain parts of the program were conducted in Wilson, Northampton, Hertford, Gates, Pasquotank, Perquimans, Camden and Alamance counties.

Consultation services by the various members of the staff have been given to schools and health departments in Harnett, Washington and Wake counties, and in the schools participating in the Southern Work-Study on Health and Health Education.

Audiometers have been purchased by local agencies in Elizabeth City for the Pasquotank, Perquimans and Camden District Health Department, in Rocky Mount for the City Health Department, in Henderson for the Vance County Health Department, and in Gastonia for the Gaston County Health Department. Several other areas are planning such a purchase in the near future. Aid will be given all of these areas in

the instruction of nurses and in working out details of as complete a joint school and health department hearing conservation program as local facilities will permit.

It is hoped that as the program for finding physical defects becomes more advanced that personnel will be available to the schools in establishing special education classes for the more important types of handicaps.

* * *

BUREAU OF NUTRITION

Dr. W. P. Jacocks, Director

General—The nutrition work as described in the 1945 report was continued in 1946. Expansion of the work was not possible because of a limited staff but activities were continued in the counties in which nutritionists had worked in previous years. In addition, a series of nutrition conferences were held in all counties in the State for public health nurses, welfare department workers, extension service agents and other professional persons who were interested in furthering better nutrition practices.

Staff—The staff during the year was as follows:

Name	Title	Date
Dr. W. P. Jacocks,	Director,	January 1-December 31
Dr. Bertlyn Bosley,	Principal Nutritionist,	January-December 31
Miss Mabel Todd,	Junior Nutritionist,	January 1-December 31
Miss Mary Parks Bell,	Senior Nutritionist,	January 1-June 30
Mrs. Lela A. Mackey,	Junior Nutritionist,	September 5-December 31
Miss Alice G. Keaton,	Junior Nutritionist,	October 1-December 31
Miss Dorothy Kiely,	Junior Nutritionist,	October 16-December 31

It will thus be seen that in 1946 the field staff was not fully recruited until the 16th of October. The turn over in the staff has been far greater than is desirable or economical but for the most part the resignations were for the purpose of getting married. Replacements have been difficult to secure.

In order to have well qualified persons available for employment scholarships were obtained for training acceptable candidates. Two students entered the University of Tennessee on scholarships in September 1946 for one year's training in community nutrition. Upon graduation they will qualify under the North Carolina Merit System Board as Junior Nutritionists and will be employed by the Nutrition Bureau.

To facilitate the work of the bureau, the State has been divided into four sections of about 25 counties each, with a nutrition consultant located in each area. The consultant is available for advice and assistance to all groups interested in nutrition in her district. She recognizes the advantages to be gained by close cooperation with schools, health departments, extension service workers, welfare department personnel, farmers' home administration supervisors and home economists and private agencies.

Nurses Conferences—Conferences for public health nurses were continued as in previous years. They consisted of 12 hours of discussion on nutrition as related to public health problems. The conferences have been offered to all public health nurses in the State, as well as to members of the welfare departments, extension service, farm security and other professional groups in each county. From January 1 to May 31, conferences were held in 59 counties, attended by 179 nurses and 17 others. The meetings, 108 in number, were held at 15 different centers. Frequently nurses traveled 50 miles to attend the conferences.

Work in Schools—Consultant service, refresher courses and follow-up work were continued with school administra-

tions. During the year, 201 group meetings were held with an attendance of 6,283 teachers, and 343 individual conferences were held with teachers. Following the refresher courses 354 teachers are now giving instruction to their children in schools in the counties visited. One feature of the program is the nutrition instruction conducted by the classroom teachers through feeding experiments with rats and guinea pigs. This method of teaching is popular and effective.

Summer Sessions—A course in nutrition education was offered at Woman's College during the summer. A staff nutritionist was invited to work with the students enrolled in this course. She gave five lectures and served as consultant for student conferences.

The School of Public Health at Chapel Hill offered a six-weeks course in elementary and advanced nutrition for students in health education and for health officers. Both courses were taught by a nutritionist from the State Board of Health.

Surveys—Surveys of the dietary habits of 9 to 11 year-old children were made in two counties (Cherokee and Rockingham) to which nutritionists were assigned. The food preferences were shown by these surveys and were used to determine the educational plan of work which was followed in the schools and the community. Approximately 130 of these surveys were made during the year.

Cooperation—From the beginning it has been recognized that the nutrition work should be carried out in conjunction with other state agencies which are engaged in nutrition activities. Cooperative arrangements have been effected with the Agriculture Extension Division, State College; Department of Nutrition, School of Public Health, University of North Carolina; the Woman's College at Greensboro, and the School-Health Coordinating Service.

On the initiative of the Extension Division a cooperative plan of health activities has been inaugurated with the State Board of Health. The nutrition work of the Extension Service, planned jointly with the Nutrition Division will use the food habit surveys as a basis for the Home Demonstration Club work. The nutrition project initiated last year by T.V.A. Extension Service, and the Nutrition Bureau is being continued.

Cooperative arrangements with the School of Public Health of Chapel Hill have been in operation since 1944 through the utilization of the services of the Principal Nutritionist in the instructional program. With the appointment this year of a Professor of Nutrition at Chapel Hill, plans for the further cooperation are being examined. The Professor of Nutrition is serving as Advisor to the Nutrition Bureau of the State Board of Health.

The graduate School of Home Economics at the Woman's College has just employed a Professor of Nutrition and has agreed that the professor may act as Consultant to the Nutrition Bureau with special reference to field work.

The school lunch program in North Carolina is under the direction of the State Department of Public Instruction. The Nutrition Bureau has received many requests from schools for assistance with the school lunchrooms. In response to this request the Nutrition Bureau and the Division of Sanitary Engineering in cooperation with the School Lunch Program directors set up workshops for lunchroom managers, workers, home economics teachers and principals. The workshops consisted of four meetings, two on sanitation and equipment, one on nutrition and one on kitchen management. Plans are in progress for continuing the workshops over the entire State.

Exhibit Material—The Bureau was invited to prepare an exhibit for the

meeting of the State Medical Society at Pinehurst in May. The exhibit consisted of charts based on food-habits surveys of children which had been made in the State by the nutritionists; one demonstration with guinea pigs to show the effects of a vitamin C deficiency; another with rats to compare the value for growth of enriched, non-enriched and whole grain cereals.

An exhibit was prepared for Nurses Conference in Durham in November. Charts showing the types of diet recommended for the tuberculosis patient, the pregnant woman, the pre-school child, the school lunch and the aged were displayed. These were used as topics for discussion by the nutritionists at one session of the conference.

The nutrition work in the State is now well organized and is popular with all cooperating agencies. When a State appropriation is secured the work will be stabilized, and in conjunction with the various cooperating agencies, nutription education and practice should move forward rapidly for the benefit in improved health of all the people of the State.

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DIVISION OF INDUSTRIAL HYGIENE

Dr. Otto J. Swisher, Jr., Director

Dr. Otto J. Swisher became Director of the Division of Industrial Hygiene on February 7, 1946 replacing Dr. C. B. Davis who resigned January 31, 1946. At this time, there were 113 cases in the dusty trade that had to be reviewed throughout 28 industries. These cases were given physical examinations and x-rays with the assistance of Dr. T. F. Vestal and Dr. Morrison. Including these cases, the following number of physical examinations and x-rays have been taken—1,112. Listed below is tabulation of the activities for 1946.

No. of physical examinations and x-rays	1,112
No. employees issued work cards	1.075
No. employees refused work cards	37
No. employees recommended for further sanatorium study	8
No. employees with active tuberculosis	2
No. companies visited for employees examinations	52
No. conferences attended	6
No. cases hearings attended	9
No. case histories submitted to Industrial Commission	20
No. supplementary case histories submitted	5

New and essential equipment, both medical and engineering, has been purchased by this Division through the additional funds appropriated by the federal government. Along with administrative work the Division has been devoting practically all of its time to the dusty trade industries, due to the shortage of personnel. Such a shortage is accounted for by the low salary range that is budgeted for additional personnel. With this handicap, I feel that this Division has made the minimum gain and has not either stood still or retarded.

Engineering Activities—The engineering section suffered still further setback in engineering personnel during this interim due to the loss of an engineer who had been assigned to this Division by the U. S. Public Health Service. This loss greatly curtailed activities surrounding general industrial hygiene work. Although federal appropriations greatly increased our budget during the last half of 1946, we were unable to secure additional engineering personnel due to prevailing salary scales.

It has been necessary to confine our activities chiefly to siliceous dust industries as charged by North Carolina Industrial Commission. We have been able to make some investigations other than in siliceous dust industries when requested by other agencies and management.

There has been planned a well-

rounded general industrial hygiene program utilizing the additional federal funds whenever personnel becomes available.

I. Field

A. Plants visited	154
1. For routine inspection	114
2. For special Industrial Hygiene Surveys	40
a. Samples atmospheric contaminants collected	187
(1) Dust	166
(2) Other	21
3. No. workers involved	15,444

II. Laboratory

A. Analyses	262
1. Dust	167
a. Particle count	165
b. Particle size	
c. Petrographic	2
2. Other contaminants	95

III. Miscellaneous

A. Reports	161
1. Routine inspection	107
2. Special Industrial Hygiene Surveys	40
3. Monthly	12
4. Annual	2
B. Conferences and Meetings	14
C. Papers presented	1

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BUREAU OF TUBERCULOSIS CONTROL

Dr. T. F. Vestal, Director

At the beginning of the period covered by this report the only piece of equipment on hand was one tractor trailer provided us by the U. S. Public Health Service on lend lease. This trailer was redesigned, painted, overhauled, and otherwise adapted for our use. A 1½-ton Ford tractor trailer was purchased and equipped to pull the tractor. Later an additional trailer was obtained through surplus properties. This unit was completely equipped for a lithographing map reproduction unit and was purchased intact. The lithographing equipment was removed and installed in State Prison on lend lease.

Later six additional army trailers of identical construction but less lithographing equipment were obtained through surplus properties. Five 2½-ton International tractor trucks were purchased to pull these trailers. Two complete 200 MA General Electric X-ray units of the Duplex Mounting type were installed in the above trailers and put into use. One of these began operation in June and another in September. During the entire year we had the use of one portable photofluorographic unit from the U. S. Public Health Service. We borrowed one Picker photofluorographic 70mm unit from the Sanatorium in July and operated it until October. Beginning in July and running through November the U. S. Public Health Service supplied us with from four to six 70mm fluorographic units which were used in the Gaston, Cleveland, and Wayne county surveys. They also provided us with able assistance in the matter of personnel and various supplies for these three county surveys. During the year we have been able to carry on nine county mass surveys as outlined in the attached table. We have also carried on surveys in four cities. The entire student body of both the Chapel Hill and State College units of the University of North Carolina were also examined at the time of registration. The negro colleges in Salisbury, Concord, Greensboro (2), Durham and Raleigh were included in the surveys. The inmates and personnel of the Caswell Training School and of the Goldsboro State Hospital were included. The Wake County and Raleigh teachers were examined, also the positive tuberculin reactors in the schools of Mitchell, Avery, and Yancey counties and the Washington High School in Raleigh. The Wayne County Schools were done prior to the Wayne County survey. The

employees of Braswell Farms were also included. During the year a total of 209,992 people passed through our chest clinic.

Summary

1. Nine county surveys
2. Four city surveys
3. Seven colleges and universities
4. Two State Mental hospitals
5. School children in four counties
6. School teachers in one county
7. One large group of farms

Location	Total Exams.	Sus. TB	Def. TB	Other
Rockingham Co.	13,093	20	28	11
Stanly Co.	5,522	69	26	49
Gaston Co.	51,564	444	179	276
Cleveland Co.	26,605	172	43	151
Wayne County	35,393	353	75	350
Orange-Person-Chatham Cos.	10,698	35	45	47
Halifax Co.	22,100	346	43	165
City of Durham	6,279	21	40	13
Town of Warrenton	456	3	1	0
City of Henderson	1,144	3	6	3
City of Rocky Mount	13,344	222	47	31
Univ. of N. C.	12,178	17	18	5
Negro Colleges: (Salisbury, Concord, Greensboro, and Durham	3,118	8	4	7
Wake and Raleigh Teachers	662	0	1	0
Mitchell, Avery, and Yancey Schools	906	9	0	1
Caswell Training School	926	13	36	1
State Hospital—Goldsboro	800	14	17	16
Shaw University	238	0	1	0
Washington High School, Raleigh (Negro)	938	3	3	0
*Braswell Farms, Inc. Wayne Co. Schools	4,028	25	9	13

*Included in Halifax County figures.

* * *

PUBLIC HEALTH PUBLICITY

Mr. Wm. H. Richardson,

Publicity Specialist

During the period included in this report, the Senior Publicity Specialist, working under the direction of the Secretary and State Health Officer, Division of Central Administration, continued the normal activities of his position, namely, the delivery of weekly broadcasts over Station WPTF, in Raleigh, and the preparation of material for newspapers and other publications designed to keep the public familiarized with the activities of the State Board of Health and elicit its support in the fight against preventable and controllable diseases.

During the period covered, broadcasts numbered 50, two less than the 52 weeks embraced, because of readjustments of schedules brought about by time changes in the zones in which chain broadcasts originate, this also affecting the affiliated stations of which WPTF is one.

Due to paper shortage, press releases were handled largely through the news distributing agencies: the Associated Press and the United Press, and were sent directly to the papers in typewritten form, in order that the list might be abbreviated but key papers supplied, at the same time.

Through the Senior Publicity Specialist, assistance was given in reporting the 1946 meeting of the State Medical Society, also to efforts to raise funds for the North Carolina Tuberculosis Association, the Red Cross and the "March of Dimes," such publicity being held to its normal relationship to Public Health.

In addition to material released over the radio and through the press, the Senior Publicity Specialist has rendered individual assistance to students and others engaged in public health work and research.

The Future of Public Health

Public Health is an index of the culture of our times. It is not apart from, but a part of our community life. In our governmental complex Public Health is an expanding frontier—and is bound to increase in usefulness. Further recognition will come with improved health services. The blessings of public health nursing, the usefulness of environmental sanitation, the need for public health education, the triumphs of prevention, and the miracles of science have garnered a fruitful harvest. Our next area is mental and moral hygiene.

Public Health work is part of the woof and warp of community life and as such is helping to weave a joyous pattern of the healthy life; in fact, Public Health is part and parcel of civilization. One of the achievements of Public Health is to make life longer and surer and freer of unnecessary pain. A long life gives opportunity for a more useful life in terms of service to man, and thus becomes one of the elements that builds toward an enduring peace. Our nation is health conscious and recognizes the blessings of prevention and other health services. A modern community could not do without health protection any more than it could do without fire protection and police protection.

—Milton J. Rosenau.

NOTES AND COMMENT

By Acting Editor

OUR FRONT COVER—Miss Mary Tillery, an artist on the staff of the Division of Oral Hygiene, painted the portrait of Dr. Carl V. Reynolds from which the cut was made. All of us who had the opportunity to see this painting appreciate Miss Tillery's portrayal of the man we admire.

At the meeting of the Medical Society of the State of North Carolina at Virginia Beach in May of this year Dr. Reynolds was re-elected as our State Health Officer for his fourth term. Becoming State Health Officer late in 1934 to fill the unexpired term of Dr. James M. Parrott, Dr. Reynolds started his first regular term on July 1, 1935. The progress which has been made during this administration is remarkable. His unanimous re-election is a tribute to the conscientious and courageous service which he has rendered.

All friends of public health are also gratified that Dr. G. M. Cooper was again re-elected as assistant State Health Officer. For more than thirty years Dr. Cooper has been a member of the staff of the State Board of Health and has inaugurated many of the activities which have been undertaken by the Board. He has always been able to conduct a constructive program even when funds were very meager or when they were relatively abundant.

ANNOUNCEMENT

The North Carolina Public Health Association will meet in Charlotte, November 3, 4, and 5.

Headquarters and all meetings will be at the Charlotte Hotel. Other hotels will allot space. Make your reservations early but cancel, please, if you just can't come.

Hotel	Single	Double
Charlotte	$3.50 to $5.00	$5.00 to $8.00
Barringer	3.50 to 8.00	6.00 to 8.00
Mecklenburg	2.50 to 2.75	5.25
Selwyn	2.50 to 2.75	5.00

LIFE LINES

Connecticut, the grand award state in the 1946 National Traffic Safety Contest, had a traffic death rate of only half the national rate. If the rates of all states had been as low, more than 16,000 lives could have been saved.

* * *

"Slow Curve" doesn't always apply to a baseball pitch. The National Safety Council says it is also a "sign of life" along the highway and should be heeded.

* * *

A Child May Dare
So Drive With Care

* * *

For going through the entire year of 1946 without a single traffic fatality, 153 cities with populations between 5,000 and 10,000 have won places on the National Safety Council's honor roll.

* * *

Whether you are at the beach or the old swimmin' hole, before you dive into the water the National Safety Council suggests you ask yourself three questions: Do you know that the water is deep enough and free of obstructions? Is there someone around who can help you if you have trouble? Has it been two hours since your last meal?

* * *

School's out, watch out. The National Safety Council reports that among children in the 5-14 age group killed or injured in traffic, one out of six was coming from behind a parked car, and one out of four was playing in the roadway.

* * *

Better Be Dead Sure Than Sure Dead!

* * *

The safe way to handle fireworks is—don't! The National Safety Council recommends that you take your children to a supervised public display.

The pedestrian may be wrong, but he doesn't deserve a death sentence.

* * *

If Your Home Isn't Safe—What Is?

* * *

The communications industry has the fewest number of disabling injuries per million man-hours worked, according to the National Safety Council, and the lumbering industry has the most.

* * *

A little burning can be a dangerous thing. The National Safety Council says sunburn not only is uncomfortable, but it can be downright hazardous.

* * *

The shape of standard highway signs have a definite meaning, the National Safety Council says. For example, the stop sign always is octagonal, and should be heeded even if the lettering is obscured.

* * *

Approximately 250,000 finger injuries, 60,000 toe injuries and 75,000 eye injuries of a disabling nature occur annually in occupational accidents, the National Safety Council reports. Of these, 25,000 finger injuries, 3,500 toe injuries and 5,000 eye injuries are of a permanent nature.

* * *

Last winter, 65 per cent of all traffic accidents in four typical snow belt states occurred on snowy and icy surfaces, the National Safety Council reports.

* * *

Ease up in a freeze up!

* * *

Firearms accidents in farm homes were third only to falls and burns in 1945, according to the National Safety Council.

* * *

Sprinkle salt generously on icy walks or mix salt with sand, gravel or cinders to prevent winter falls, the National Safety Council suggests.

A little skidding can go a long way!

* * *

Thirty-five per cent of all accidental deaths are due to accident on home premises, the National Safety Council reports.

* * *

A special study made by the National Safety Council of lost-time accident cases involving hand trucks revealed that in nine out of 10 cases the injured person was working unsafely, and that in six out of 10 cases unsafe conditions contributed to causing the accident.

* * *

Don't learn work hazards by accident!

* * *

Twinkle, twinkle little star
Up above my head you are.
I forgot my safety hat,
The hammer was no acrobat.

* * *

During winter months, for every 30 pedestrians killed in the three hours just before sunset, 100 are killed in the three hours just after sunset.

* * *

Next to speed, driving on the wrong side of the road, which includes improper passing, was the most frequent driver violation reported to the National Safety Council in 1945.

* * *

Select children's toys with a Safety Claus in mind.

* * *

In 1945, there were more accidental deaths of workers in agriculture than in any other industry. However, there were more deaths of farm residents from home accidents than from any other type of accident. Off the farm, there were more deaths of farm residents in motor vehicles than from all other types of accidents.

* * *

December is one of the two deadliest months of the year for accidental deaths, the National Safety Council says. Peak traffic deaths, burns and asphyxiations swell the toll.

* * *

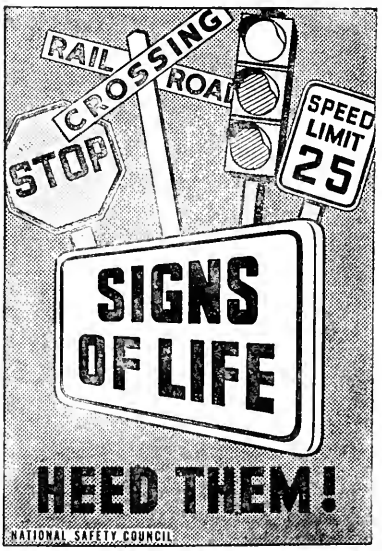
Inspect your Christmas tree lights for flaws,
To keep your home happy for Santa Claus.

* * *

In the snow belt states, traffic death rates, based on mileage, are 24 to 53 per cent higher in winter than in summer.

* * *

FAMOUS LAST WORDS: I'd better get the snow cleaned off this windshield at the next town; I can't see two feet in front of me.



The Health Bulletin

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Vol. 62 JULY, 1947 No. 7

First Home of the State Board of Health

CONTENTS

THE Health Bulletin
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Vol. 62 JULY, 1947 No. 7

CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Poliomyelitis

By

WALTER HOWARD WILSON, M.D.

Poliomyelitis is an acute, common infectious disease which is prone to occur in epidemic form.

In its early stages poliomyelitis must be differentiated from Influenza, which is found characteristically to occur in epidemic or even pandemic outbreaks and is highly contagious. Influenza comes on with a sudden onset of fever, prostration, aching of the back and extremities, and progressive inflammatory reaction of the respiratory mucosal surfaces. Recovery in cases of influenza is generally prompt unless complicated by bronchitis, pneumonia, meningitis, peripheral neuritis, or secondary bacterial infections. In the presence of prolonged fever, complications of influenza should be suspected. The possible coexistence of poliomyelitis and influenza must also be considered in early cases of respiratory infections with aching and prostration.

Poliomyelitis is a disease which has existed for many centuries, but few contributions on the subject were made to medical literature prior to the last century. This malady has in recent years commanded more attention because of certain strides of progress which were made in improvement in methods of diagnosis and treatment of cases and methods of rehabilitation. Large sums of money have been contributed in recent years to further the studies of various aspects of poliomyelitis. This disease often leaves crippling deformities which maim many victims and thus the attention of the public is drawn to this serious disorder. National interest in this disease grew tremendously when the late Franklin D. Roosevelt was afflicted with it, with the result that most of the motor power in his lower extremities was lost. National sympathy was aroused to the extent of causing vast donations of money for the formation of the National Foundation for Infantile Paralysis, which was organized to sponsor research in this disease, to rehabilitate paralytic poliomyelitis patients, and to aid and assist worthy impoverished victims of this disorder.

In the past two decades ideas concerning the handling and care of cases of poliomyelitis have been the subject of much controversy among medical circles, largely because of the efforts and ideas of Sister Elizabeth Kinney who worked alone as a nurse in Australia. She publicized and to a certain extent perfected the technique of "hot pack" applications to paralyzed muscle groups.

The introduction of the mechanical respirator, commonly called the "Iron Lung," was a great step forward in the

care of poliomyelitis patients who suffered from paralysis of the muscles of respiration, and many lives have been saved or prolonged as a result of the judicious usé of this valuable therapeutic machine.

Numerous articles, pamphlets, monographs and books have been written on the various phases of poliomyelitis and a great deal of valuable work has been done on this subject, but there is still much to be learned about it in all of its various aspects.

Poliomyelitis is caused by a virus which is only thirteen millimicra in diameter. It is resistant to ether and to low concentrations of phenol. It is recognized by inoculation of the monkey. This virus can be stored for long periods of time in glycerin and it resists freezing. It can be destroyed by potassium permanganate, ultra violet light, heat of 55° centigrade for one-half hour, or by chlorine. Its host range includes man, certain strains of monkeys, and perhaps some strains of mice. There are several strains of poliomyelitis virus, and they are indistinguishable except for their antigenic properties.

The age incidence of poliomyelitis seems to have been increasing steadily in recent years. This might be due in part to better statistical reporting or to a general increase in the longevity of infants and children.

Epidemics of poliomyelitis tend to occur during the summer months, but cases may occur sporadically at any time of the year. Epidemics are more likely to occur in rural rather than urban areas, and it has been suggested that this might result from a difference in sanitary facilities. Trauma to the respiratory or to the alimentary tract may break down one's barrier to invasion and thus create a portal of entry for the virus into the body. Such might be the case when tonsillectomy, adenoidectomy, dental extractions and other operations are performed, and the same circumstance would apply following a severe attack of enteritis.

There are several possible modes of transmission. The most important of them is from person to person by means of infected stools, respiratory drippings, and other means of contact. Milk and water which have become contaminated are also means of spread. Flies may play an important part in the spread of this disease, particularly during the course of an epidemic when infected excreta are left exposed. The virus has frequently been recovered from flies in epidemic areas. Human carriers who harbor the virus may remain unrecognized and be allowed to further the spread of this disease.

The virus has several portals of entry into the human body. The most important one is thought to be the alimentary tract, and less frequently it may gain entry through the nasopharynx or the skin, particularly if there is an area whose resistance has been lowered by injury or disease, thus breaking down its barrier to infection. The virus may be present in the alimentary canal, in the nasopharynx, or on the skin, and not produce recognizable symptoms of the disease, unless it gains access to the nervous system.

The incubation period of poliomyelitis varies from a few days to several weeks, and cannot always be accurately determined. When the infected stool specimen is injected into a susceptible monkey in the laboratory, the animal usually develops symptoms and signs of the disease in about ten days.

Individual susceptibility to poliomyelitis is variable and is dependent upon several factors. Statistically, males are more susceptible to it than females. Pregnant women are apparently more susceptible than non-pregnant ones. There is a tendency toward familial increase in the incidence of this disease. It is thought that one attack of poliomyelitis confers immunity, but there have been several bona fide second attacks, presumably from a different

strain of the causal virus. Passive immunity has not been found to be of proven value, and convalescent serum in recent years has not been a practical therapeutic agent.

The symptoms of poliomyelitis are by no means always clear-cut. The disease may begin as a presumably mild illness or it may appear as a rapidly fulminating disorder. In epidemic areas it is best in so far as possible to treat every minor illness as poliomyelitis until reasonably proven otherwise, particularly where there is a history of fatigue, exhaustion, or excessive chilling.

In epidemic areas there are numerous healthy carriers of the virus. Some of these carriers can be recognized by the identification of the virus in their stools. Most persons who have acute poliomyelitis do not develop paralysis. In such cases one may find vague reflexes, gastrointestinal disturbances, and a transient increase of cells in the cerebrospinal fluid. A few cases proceed more or less rapidly to stages of paralysis.

The diagnosis of poliomyelitis is frequently difficult because of the variability of involvement and symptoms, and because there is no definitely reliable and practical diagnostic test. On seeing any suspected case of poliomyelitis one should first determine how sick the patient is and should note particularly how well the patient can breathe and swallow. A careful search should always be made for signs and symptoms of influenza in order that its presence might be ruled in or out. The suspected poliomyelitis victim should be observed for evidence of increased muscle spasm, pain, and alterations in function of the bowels and bladder. Tremor in a hand or a foot may be present prior to the onset of paralysis. There may be vasomotor changes with differences in temperature and perspiration in various areas of skin.

It is important to watch the patient carefully and to examine him frequently, in a manner which is not exhausting to him, to detect symptoms of the disease as soon as possible. The reflexes should be cautiously tested, and carefully observed and recorded for future reference. The reflexes may be hyperactive initially and hypoactive or absent later.

Lumbar puncture is often helpful in ruling out other conditions, but it frequently shows no specific changes which are absolutely diagnostic of poliomyelitis. When there is meningitic involvement there is likely to be found an increase in cells in the cerebrospinal fluid. The white blood cell count is usually increased in meningitis.

Prognosis in cases of poliomyelitis is usually difficult, and depends to a large extent upon the clinician's diagnostic acumen. The degree of involvement in individual cases is variable. The prognosis is dependent upon the stage and degree of involvement. The extent of the paralytic lesions cannot without difficulty be determined ahead of time in acute cases. Allowances must be made for errors in diagnosis.

The treatment of poliomyelitis has been in recent years the subject of much speculation and some controversy. There is no specific therapy against this infection, and once the barrier against it is broken by the virus, there is no definite method of combatting it in the acute stages. Accurate diagnosis by history of the case, careful physical examination and muscle evaluation is essential. The patient should be isolated in the acute stage since the virus is more apt to be spread then than in the convalescent or chronic stages. Gown technique should be employed when approaching the patient. Masks may be worn, but they are worse than nothing unless exchanged for fresh, sterile ones on making each subsequent visit. The bowel excreta should be disposed of properly by incineration, but this method of disposal is not always practical. If gloves are worn, the stool may, for practical purposes, be emptied into a toilet commode and be flushed away.

Reassurance of the patient with poliomyelitis is of utmost importance, because of the patient's great fear and dread of this disease. Adequate footboards are helpful in preventing bending of the feet. The patient should be made comfortable by the proper placing of small pillows underneath the back, shoulder, elbow, wrist or knee. Frequently the patient will rest more comfortably with the knees slightly flexed.

Maintenance of proper fluid balance is important, and impending edema of the brain and spinal cord should be combatted. Time and rest will aid sick and involved neurones. One should carefully supervise elimination from the bowels and bladder. The intestinal musculature may become so weakened as to produce severe constipation.

In the acute stage of the disease there is apt to be considerable pain in the muscles, but any drug which produces artificial sleep should be avoided or given with extreme caution, because artificial sleep might be disastrous if the respiratory muscles happened suddenly to be knocked out of function. Opiates are generally contraindicated because of their characteristic tendency to depress the respiratory center.

The value of such methods of therapy as convalescent serum, gamma globulin and gelsimim has not been established definitely.

In cases of paralysis or severe weakness of the respiratory muscles, the mechanical respirator is employed. This is often a life-saving procedure, but is expensive, and it is difficult to get the patient to allow himself to be removed from it, because he soon becomes so accustomed to it and so dependent upon it. The patient should not be allowed to become too dependent upon the respirator, and should be told that every effort is being made to remove him from it at the earliest opportunity. He should be removed from it at frequent intervals so that gradually he can be removed for longer and longer periods of time. In a sense, removal from the respirator should gradually be begun as soon as the patient is committed to this machine.

Physiotherapy is of great importance in the treatment of poliomyelitis. It helps to overcome pain and discomfort, and to release muscular spasm. The qualified physiotherapist effects a system of muscle reeducation, thus allowing proper usage of muscles and muscle groups. Muscle substitution and muscle alienation are combatted, while muscle control is furthered and improved. The physiotherapist begins with tendon stimulation and gradually progresses to passive motion, and then to active motion. Following this, full strength is the goal.

The orthopedist is a valuable consultant who provides means of support to the patient when such is required. Braces, splints, and corsets insure maintenance of the proper position and may prevent muscle contractures or foot-drop or other deformities. Tendon transplants are frequently desirable to insure improved function of a part of the body.

Occupational therapy provides increased strength of muscles, diversion of the mind, and allows the handicapped patient to learn to produce useful or marketable materials.

Social rehabilitation of the paralytic patient cannot be emphasized too strongly. The patient must be taught the necessary things for living a self-sufficient life outside his sick-room. Competent psychologists and psychiatrists can accomplish a great deal in guiding the physical, social and emotional adjustment of the patient with paralysis or deformity. This is of especial importance in the young child.

In an attempt to handle the social rehabilitation of the paralytic case, one must make every effort to overcome fears of deformity, disability, general loss of prestige, and the wearing of orthopedic appliances. It should be borne in mind that in so far as the patient is concerned, there is no polio

like his own case. The victim should be handled cheerfully and cautiously. He should be given a guarded prognosis. The parents or relatives should be counseled against over-sympathizing with patients, thereby preventing feelings of self-consciousness and futility on the part of the patient. Psychological trauma is frequently best treated by prophylaxis. Readjustment must be begun at once to prevent saving one's body and at the same time losing one's soul.

In epidemics of poliomyelitis one should consider every acute febrile illness as a possible authentic case, and the patient should be isolated in bed until it is ruled out. Undue exposure and fatigue should be avoided. Chilling of the body surfaces should be prevented in so far as possible. Elective surgical operations, particularly of the upper respiratory tract should be avoided until after the subsidence of the epidemic. Contaminated water for drinking or bathing purposes should be avoided in so far as possible. Flies should be excluded destroyed or removed, particularly when privies are in existence in the vicinity. Proper individual hygiene should be insured, especially as related to cleanliness and the maintenance of good health. Unnecessary personal contacts should be avoided. Panicky behavior should be suppressed. Persons should be prevented from moving into an epidemic area. Moving out of an epidemic area is often useless, because the individual is likely already harboring the virus by the time the epidemic is recognized.

It is important to realize that there is no specific means of diagnosis, prophylaxis or cure of this dreaded disease, and the field is open for further work, study and research. Work has been done on a prophylactic vaccine, but no such product has yet been of proven value. An effective vaccine against this disease would obviate many of the problems connected with the handling of poliomyelitis cases.

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Thedosia Dargan Campbell, age five months, daughter of Mr. and Mrs. John H. Campbell, Reedsville, Virginia. Mrs. Campbell was the former Miss Thedosia Flud, pleasantly remembered as a public health nurse in North Carolina.

Ashe County Memorial Hospital

By
WADE E. ELLER, SANITARIAN
Alleghany-Ashe-Watauga District
Health Department

During a long period prior to 1938, distressing needs for a local hospital in Ashe County, North Carolina, were acute and clearly obvious to many of the citizens. Hospitals most used by Ashe County people at that time were located at North Wilkesboro, Elkin, Statesville, and Winston-Salem, North Carolina, and at Abingdon, Virginia and Bristol, Tenn.-Va. Still other hospitals were receiving patients from this area and to this day continue to do so, but in proportions relatively small.

It was a privilege to the people to have the benefits of hospitalization available to them even at such distances from their homes, and they were fully appreciative of the excellent medical and nursing care which they received in all those good hospitals. The names of many good doctors and nurses in those institutions still are held in grateful memory around many firesides in Ashe County.

Due to a rapidly decreasing number of physicians and the advancing ages of others, medical care of the sick and injured was also decreasing at an alarming rate. Nurses were not available to any practical extent. Until the middle of that year (1938), the County did not have a public health department. The problem of finding even practical household help had reached a point beyond solution in most cases where such help was seriously needed.

The old order had definitely changed and had left a large rural and agricultural county without any new and systematic way of dealing with a very ancient problem, namely, that of caring for their sick and dying neighbors, friends and kin. Since the problem is not one which can be ignored, a rational and adequate solution forced entrance into the thinking of those people who were actively giving concern to the situation.

Conservative estimates at that time placed the costs of hospitalization to those who could and did use the available hospitals at figures from $75,000 to $100,000 per year. Besides these costs and more important than they, were the considerations of inconvenience in reaching and visiting the sick ones at such long distances from home. There also was excessive risk of life itself due to long hauling of the seriously ill and emergency cases. All of these considerations gave much point to the discussions favoring the establishment of a local hospital. However, the difficulties in the way of such an undertaking (as in this one) often loom larger in prospect than in retrospect.

Ashe County numbers a population of approximately 23,000 people, ninety-five per centum of whom live on their farms or as tenants in very small number on rented land. The average farm in the County is about 61 acres and by far the most of these farm lands are made up of hillsides suited only to grass as a crop. The entire County is a part of a high plateau interspersed with many mountain streams of crystal water and with rugged peaks and ranges of mountains lifting their summits to the blue skies and the playful clouds. The whole topography, while delightful and recreational, does not at some seasons of the year afford the safest thoroughfares of travel. On the contrary, the climatic conditions are an asset in Summer to the operation of a hospital.

Amongst the sturdy people of this area, whose ancestors came there during the frontier days of Daniel Boone and helped fight the Battle of King's Mountain, it was a frequent occurrence in the older days that one heard private and group discussions of these needs and desires for a local hospital. The need was great and desire was strong; but too often the obvious suggestion appeared too impractical. Such discussions mostly terminated in wishful waiting.

In June of 1938, two men who had been concerned about this matter for a long time met on the steps of the Court House in Jefferson one day. After friendly greetings, the question of establishing a local hospital for the people of Ashe County was raised and a short talk followed on the subject. At the end of the conversation, they shook hands in a pledge between themselves to unite their efforts to get the job done at the earliest possible time. They also agreed that, if either one of them should die before the work could be accomplished and a suitable and adequate hospital given "a local habitation and a name," the survivor would continue in the effort.

One of these men, Professor Robert Lee Plummer, has passed away to receive the rewards of a life well spent in labor for his people; but happily he lived to see the Hospital in operation with great delight and joy to himself and a promise of improved medical and nursing care to the sick and injured and often dying people. However, the job is not yet completed. There remains much to be done to make the Hospital adequate for the needs the people have for it. Definite planning toward this objective is now under way.

The Ashe County Memorial Hospital, Inc. began operation November 1, 1941. A beautiful location overlooking the town of Jefferson had been secured in 1939 and the work of construction under a W.P.A. project had been started and carried on through the years 1940 and 1941 up to the opening time, with the local financial participation coming from individual people whose number was legion and some funds also from civic and church groups. A community had awakened not only to its needs, but it had resolved to do something definite about those needs. People were giving dimes and dollars and men were cooperating without reward or hope of material rewards to provide the background and support necessary to the accomplishment of the work in progress.

At this point, it seems well to set out in statistical form some of the pertinent facts about the cost of the venture and the results over the years in terms of service rendered. Perhaps it would be well to say that the Hospital has a per day rate to patients for private room of $5. The rate for semi-private room is $4 per patient per day and the ward rate is $3 per day.

Total cost of plant	$36,949.11
Total cost of equipment	14,235.47
Total major operations 11-1-41 to 6-1-47	438
Total minor operations 11-1-41 to 6-1-47	1,349
Total number of in-patients (same period)	6,870
Total number out-patient treatments (same period)	33,271
Total days of patient-care (2 mos. 1941)	354
Total days of patient-care (1942)	3,293
Total days of patient-care (1943)	4,341
Total days of patient-care (1944)	6,244
Total days of patient-care (1945)	7,392
Total days of patient-care (1946)	8,666
Total days of patient-care (5 mos. 1947)	4,017
Since November 1, 1941	34,307

The Hospital employs a surgeon on full-time annual salary and also an assistant physician on full-time salary. They are paid in monthly installments.

The Hospital is a 28-bed hospital,

but most of the time it is necessary to operate it much beyond the intention of its capacity. This is so literally true that the Board of Trustees is moving as rapidly as possible to provide increased facilities to take care of the demands made upon the Hospital for more complete medical and nursing care of patients who need these services.

Plan of Organization

After a definite decision was made to undertake the promotion and development of the hospital project for Ashe County, a number of people were approached and found favorable to the proposal. The first meeting was held in West Jefferson soon after the date of the agreement referred to above. This meeting resolved itself into a general committee for work and appointed several sub-committees, such as: Locations, Building Plans, Finance, Publicity, etc., etc. A general Chairman was appointed and chairmen of the sub-committees were named.

Service on these committees was of course voluntary and gratis contributions of time and effort were taken for granted. From time to time, many meetings of all committees were held. The cooperation of civic clubs and organizations was enlisted. The Sky-Land Post, local newspaper, devoted much space to the development of the idea of the proposed hospital. The Jeffersons Rotary Club gave the project full endorsement and the ministers of the various churches accorded it their approval. Generally citizens and business people gave encouragement and offered financial support.

The promotional work was carried on by the voluntary group which later came to be called the Ashe County Memorial Hospital Association. At a later time, it was decided to incorporate the Association and to conduct the affairs under a charter of authority from the State of North Carolina. The charter was granted and it authorized the issuance and sale of $100,000 of non-profit and non-negotiable stock of the nominal value of $10 per share. This stock can not pay dividends and is not transferable except as a part of the estate of the owner.

The stock conveys to the owner the right to vote in stock-holders meetings for the election of directors and such other business as may come before the stockholders meetings. It also conveys the right to be elected as a director and to serve without pay and to perform such duties as the Board of Directors, which acts as a board of trustees, may place upon him with his consent and this duty also without any remuneration.

In addition to the sale of shares of stock, donations were solicited from people who did not desire to purchase shares of stock, and most people responded to this request. Also donations of real estate were accepted for the location of the Hospital. The tract of land on which the Hospital is located was conveyed in four deeds made to the County Commissioners of Ashe County and their successors in office in perpetuity. In turn they leased the property for 99 years to Ashe County Memorial Hospital, Inc. without rental and for a nominal sum of money. At the time of the completion of the Hospital building, only a relatively small indebtedness existed and this was liquidated within six months time.

The Hospital is operated by the Corporation thru a Board of Directors (eighteen in number) elected by the stockholders (288 in number) and the Directors in turn elect a president, vice-presidents, a secretary, and a treasurer and also members of standing committees, in addition to the **ex-officio** members, none of whom receive any pay for their services.

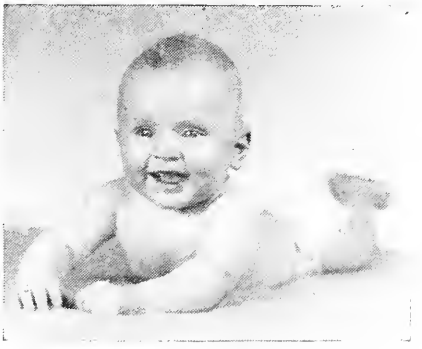
The earnings of the Hospital can be spent only for the necessary employment of personnel and other operating expenses of the Hospital and for expansion of facilities and increased services. In the matter of finances the Hospital

has been successful in making a gain over all expenditures and is now making preparation to build a nurses home of fire-proof construction to house 28 nurses including recreational and social facilities for the nurses. A central heating plant also is being planned and it is expected that, in the not too distant future, an enlargement of the present Hospital Building will be undertaken to make it at least an 80-bed Hospital.

It would not appear to be fitting to mention only these more or less prosaic things in connection with the construction and operation of the Hospital. Far more important than material matters are the thousands of days spent in the care of the sick and injured people who have entered its doors for help. Some have died there, but it is a good place to die if that fatality cannot be avoided. The death rate amongst the patients has been very low and thanks to all who have had a part in the treatment, the nursing and the other care of the patients. Many hundreds of babies have been born there and their mothers have been taken care of at a time when help might have been very difficult otherwise to obtain. Undoubtedly many have been treated whose lives were prolonged for future usefulness to themselves and to their Country. The Hospital maintains a ward for colored people, and for them is provided the same type of treatment given to white people.

An unusual feature in the operation of the Ashe County Memorial Hospital is that the Public Health Department is housed in the Hospital Building. It was so planned from the beginning of the building program. The result has been very gratifying in making both curative and preventive medicine practices more convenient to the people who need both types of service. The figures given above in regard to the service of the Hospital do not include a showing of the many thousands of immunizations against smallpox, typhoid fever, whooping cough, and diphtheria and all the blood tests and the throat and lung examinations and expectant mother visits to the Health Department and the sanitation work done in the towns, the County and the public schools, all of which and more has been done in the name of the prevention of communicable diseases.

Concentrating the work of prevention of communicable diseases and the venerable practice of curative medical arts and sciences here serves the people well and service to people appears to be the reason and basis for all of it. What pursuit can be more noble than to heal the sick, to open the eyes of the blind or to give better vision to those whose eyes are dim, or to unstop the deaf ear, or to make the lame to walk, or to cool the fevered brow of one whose life is ebbing away, or to help a mother who has gone down into the shadows to bring a new life into the world? These things must surely come to pass. Then too if the clutch of dread disease can be foreseen and his attack forestalled, that too it would seem is a merciful and noble ministration to human kind. Forward together!



Thomas Lee Caviness, Jr., age six months, weight 20 pounds, 4 ounces, son of Mr. and Mrs. Thomas Lee Caviness, Route 1, Fuquay Springs, N. C.

"The Six Year Old Gets Ready For School In Cabarrus County"

By
MISS ANNIE H. ROBERSON, R.N.
Training Supervisor, Public Health Nursing
Cabarrus County Health Department
Concord, North Carolina

Pre-school clinics have recently come to an end in 18 elementary schools in Cabarrus County. The 837 children who will enter school next year and the 655 parents who took them to their respective schools for their pre-school examination have had a memorable experience.

The number of children examined and the number of parents attended far exceed previous attendance figures. This was due partly to advance publicity released by the health department staff through the press, and through community groups and partly to the effective work of members of P.T.A. in rounding up these children and in impressing parents with the benefits to be derived through accompanying these children. It was gratifying also to discover that a larger number of children were found to have been previously immunized against contagious diseases, and to have had defects already discovered and corrected. We feel that this denotes an increasing awareness on the part of parents of the value of early attention to the small child's health needs.

These clinics were held in April and the first two weeks in May. The parents of prospective first graders were invited by the school authorities to attend a clinic on a certain date and to bring with each child a record of his disease experience and of the immunizations or immunity tests already received in order that this information might be entered on the child's school health record.

In some schools on the appointed day of the clinic, the 1st grade children were given a recess in order that their teachers might be hostesses that morning to the children entering next fall. Five or six public health nurses, assisted by P.T.A. members manned the clinics, and the examining physician was Dr. J. Roy Hege, Health Officer.

Parents and pre-schoolers were welcomed by students stationed at school entrances. They then were directed to a waiting room which often was a first grade classroom. There the children were occupied in taking off shoes in order to be weighed and measured and their records were made ready to present with them to the doctor. After being shepherded behind screens to be undressed and draped for their examination, they proceeded to the doctor's room. His calm and pleasant manner usually dispelled any fears on the part of the child. The doctor then interpreted the physical findings to the parent and made recommendations regarding diet, dental care, and the correction of various defects. The parent and child then proceeded, if necessary, to another room where two nurses administered the needed protection against diphtheria, whooping cough, and small-pox as required by law for school entrance.

While waiting their turn to see the doctor, the children in many schools were allowed to draw on black boards or to color with crayons. Some children were entertained with story telling or with books. Parents as well as children seemed to enjoy the nurse's story of

"Jimmy Chew" (the six-year molar). Health pamphlets were displayed and parents invited to take any number they wished. After the children had completed the rounds with the doctor and nurses, ice cream was served and favors made by first grade students were given the guests. Thus ended an exciting morning for these pre-school children. As for the parents, some of them looked tired but many remarked that it had been worthwhile.

In comparing attendance figures with last year's, we found that there were 212 more children examined this year; and that throughout the county, 78% of these children were accompanied by parents, whereas last year this figure was 60%. We do not know but feel that some sort of record may have been established in Concord schools where 91% of the children had their parents present. In Kannapolis schools, 88% of children were attended by a parent. The number of children referred for dental and medical care were: 242 for defective teeth; 199 for diseased tonsils; 9 for visual defects; and 3 for other defects.

As valuable as it is for parents to understand these physical findings and to learn how their children's physical conditions might be improved before school entrance, these clinics should have been beneficial to the children in a less tangible way. This experience should have conditioned them somewhat for the next step in their growing-up process.

Other figures might be interesting if we could estimate them. How many of these children found this a pleasurable experience? How many children who had eagerly anticipated school days had added proof that school would be fun? How many children already apprehensive of strange people and new places received evidence that teachers are much like parents, that a classroom has chairs just the right size? How many children learned that being examined by a doctor did not hurt and that the nurse made a game of being vaccinated?

If these numbers can be assumed to be on the increase, then surely we may justly feel that through these clinics we shall have helped these children emotionally as well as physically to make a smoother adjustment to school life.

The Hows and Whys of Filth and Flies

By
CHARLES M. WHITE, STATE DIRECTOR OF MALARIA CONTROL
and
HERBERT F. SCHOOF, ENTOMOLOGIST
N. C. State Board of Health, Raleigh, N. C.

The common house fly is not only one of man's most obnoxious pests, but is also a dangerous menace to his health. The house fly carries the germs of typhoid fever, diarrhea, dysentery, and other intestinal diseases. In areas where infantile paralysis was prevalent, the virus of this disease has been found on 50% of the house flies examined.

House Flies Carry Disease & Filth

The house fly is by nature very filthy in its habits. They are often found resting on human feces, sputum, manure, garbage, decaying animal flesh, and other forms of filth. Upon leaving these places they often visit your kitchen or dining room where they walk on your biscuits and pies, contaminate your milk and other food stuffs, and gather round the lips, eyes, and nursing bottles of babies. The house fly has a hairy body and sticky feet to which both filth and millions of disease germs cling and are later dropped off at the various stations at which the fly stops. No one would think of putting such filth as manure and garbage on the dinner table; yet, by allowing flies to come into your home you are doing this very thing.

Where Flies Breed

Like most insects, a fully grown fly does not look at all like its young. When the fly lays her eggs in groups of from one hundred to one hundred fifty in decaying matter, they usually hatch within eight to twenty hours into small, whitish maggots. These maggots grow and after five to fourteen days change into seed-like, brownish shells. Within this shell the maggot grows into the adult fly. The entire development from egg to adult takes from six to twenty days. The maggots will develop in any moist, warm, decaying organic matter. They can be found in compost piles, manure, garbage, decaying fruit and vegetables, and other filthy places.

House flies often live more than a month and occasionally fly as far as twelve miles. If food is plentiful, a large number usually remain near the breeding place. The long life of the fly, as well as the distance to which it will travel and the fast rate of breeding makes this insect one of man's worst plagues.

Three Ways to Control House Flies

In order to completely eliminate flies within an area, these three important things should be done:

1. Destroy breeding places by cleaning up all filth.
2. Screen all homes, cafes, abattoirs, markets, and other food-handling places.
3. Use DDT as a residual spray.

Since house flies need moist, warm, decaying matter in which to breed, the sanitary disposal of such material is one of the most effective ways to reduce the fly population. All animal shelters; such as, stables, cow sheds, pigpens, and chicken houses should be kept as clean as possible. Garbage should be kept in a fly-proof can and hauled off every few days. It should not be dumped and left to decay at some out-of-the-way place near the edge of town, but should be burned in an incinerator or buried in the ground

and covered with a heavy layer of dirt. All privies should be constructed and maintained in accordance with the specifications of the North Carolina State Board of Health.

Even though every effort is made to destroy fly-breeding places, it is very difficult to do a complete job. Even if all fly breeding were eliminated in any locality, flies would come in from the outside. For this reason, it is necessary to have good screens on all places to be protected against them.

Even on a well-screened home it is difficult to keep all flies out. They gather around the doors and enter when the doors are opened. Small children running in and out of the house keep screened doors opened a large part of the time, regardless of the efforts on the part of parents to have them to do otherwise.

By spraying DDT on the porches, around all openings; such as, doors and windows, and on the walls and ceiling on the inside of the house, the number of flies which enter the home can be cut down almost to zero on a house that is screened. DDT works very slowly. When a fly sits upon a surface that has been sprayed with DDT, it is sure to die but it often takes as much as two or three hours. Flies are not repelled by the presence of DDT at all. For this reason, a home without screens will still have flies if any are breeding in the neighborhood; yet, the number of flies will be greatly reduced, as only the new arrivals are present.

In spraying with DDT, a 5% solution should be applied to the screens, porches, walls, ceilings, and other places. Flies coming in contact with the sprayed surface will be killed for four or five months after it is applied.

The walls and ceilings of animal shelters in the vicinity should also be sprayed with 5% DDT. When flies enter such places to lay their eggs they will be killed if they rest on a sprayed surface. Newly hatched flies, that usually rest on the walls or ceiling before flying off, would also be killed. The farmer will save money by preventing fly breeding in the manure, as reliable authorities state that the value of manure as a plant food is reduced at least 25% by the breeding of flies. The DDT should not be sprayed on the ground, floor, or manure pile as lasting results cannot be obtained by that method. It should always be applied to the walls and ceiling.

It is suggested that detailed instructions be obtained from your local health department regarding the use of DDT.

Community Fly Control

Flies being very sociable, are inclined to visit around among their neighbors, so in order to get rid of them around your premises, it is necessary that control operations be carried on not only on your property but on your neighbors also. For this reason, it is most practical for each family in a community to pay their part of the cost and hire someone to spray all of animal shelters and porches in the area. Your local health department will be glad to assist you in the organization of community fly-control programs.

Notes and Comment

BY ACTING EDITOR

OUR FRONT COVER—In the former home of Dr. Thomas Fanning Wood, corner of Chestnut and Second streets, Wilmington, North Carolina, the State Board of Health had its beginning.

"In the seventies Dr. Thomas Fanning Wood, of Wilmington, caught the vision of the possibilities of public health work to North Carolina. How fully he grasped the far-reaching consequences of his idea, how clearly he saw the ever-growing hosts of lives

saved as a result of his vision and inspiration, we shall never know. We do know that the vision never left him, and that under its sway he worked, through the Medical Journal which he edited and through the North Carolina State Medical Society until his influence reached the people of the State in their General Assembly of 1877, with the effect that on February 12, 1877, the North Carolina State Board of Health was born. Ours was the twelfth state board of health to be established.

"1877. Board created by the General Assembly. Consisted in the beginning of entire State Medical Society. Society acted through a committee. Annual appropriation, $100.00."

In this building Dr. Wood lived with his family and carried on the work of the State Board of Health from 1877 until his death on August 22, 1892. Here was issued the first copy of the Health Bulletin, April, 1886. The site on which the building stands has been designated as part of a new home for a department store. In this building a progressive era was inaugurated. Now it must become the victim of progress, a milestone which will live in memory, if not in physical form.

* * *

ASHE COUNTY MEMORIAL HOSPITAL is substantial evidence that the spirit of man when dedicated to high endeavor can accomplish much. Mr. Eller tells us of what has been accomplished. He has left out one fact which his friends think should be told.

"In June, 1938, two men who had been concerned about this matter for a long time met on the steps of the Courthouse in Jefferson one day." The two men who pledged between themselves to unite their efforts and shook hands in recognition of the pledge were Professor Robert Lee Plummer and Mr. Wade Eller, the author of the article, Mr. Eller being too modest a man to mention his part in the project.

* * *

MISS BUCHAN — As a public health nurse and a Christian woman Miss Dell Buchan did much to advance the public health program in North Carolina. There are many who have paid tribute to her memory. Perhaps none do so with more feeling than Mr. H. E. Spence of Duke University.

"To tell the facts of this woman's life would be a simple matter. The newspapers carried an account of her family, her other near relatives, the time and place of her funeral. That which is not in the papers and can never be recounted is the quality of the life she lived, the influence for good which she exerted, the inspiration she furnished, the encouragement which she gave, the words of comfort and cheer for those who needed consolation, the loving gracious smile with which she drove gloom from so many saddened lives. Only eternity can give a correct estimate of the worth of such a life as hers.

"She wrote no books, ran for no office, made few speeches, basked in no limelight of publicity; yet it would be hard to imagine a life which influenced directly or indirectly more persons than she did.

"The vast host of friends which she bound to her as by 'hooks of steel,' the hearts made happy by her sympathy, the pains alleviated by her personal care and attention, these are the things which the newspapers cannot evaluate.

"Hers was the life of the 'Angel of Mercy' who walked unassumingly along the pathway of duty, regardless of the pain or privation which lay in that path; shirking no task, no matter how unpleasant or difficult; slighting no service, no matter how apparently insignificant. Hers is the story of the effective citizen who, without pomp or parade, worked diligently for every good cause in every community which she blessed with her presence.

"Wherever she went, wrong was reproved and goodness exalted. Wherever she went, the community took on a healthier civic aspect and developed a higher moral quality.

The Health Bulletin

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Vol. 62 AUGUST, 1947 No. 8

CONTENTS

THE Health Bulletin
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CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Vital Statistics Trends For 1947

By WILLIAM H. RICHARDSON
North Carolina State Board of Health

Deaths from all leading causes, except cancer and accidents, showed an appreciable decline during the first quarter of 1947, according to reports received by the Vital Statistics Division of the North Carolina State Board of Health. There was not a single death reported as the result of malaria, scarlet fever, or typhoid fever. Cancer fatalities numbered 635 during January, February and March as compared with 623 during the corresponding period of 1946, while accidents of all kinds resulted in 592 fatalities, against 539 the first quarter of the previous year.

The most noteworthy feature of vital statistics reports compiled so far this year is the unprecedented increase in the number of births. During the three months for which figures have been recorded with the State Board of Health, 28,892 babies were born in North Carolina, as compared with 21,299 during the first quarter of 1946—a year which broke all previous records up to that time, with 100,595 live births. This reflected an increase of 7,593 during a single three-months' period, or an average of 9,631 live births for each month included in the 1947 report. If the monthly average so far reported this year should be maintained through December, the 1947 total of births in this State would be 115,572. This, however, is not a forecast—simply a conjecture.

Deaths from all causes in North Carolina totaled 7,715 during January, February, and March, this year, which was a decline of 233 under the total for the corresponding period of 1946. If we showed an upward trend in births, and also an increase in deaths, that would not be encouraging. Fortunately, however, this condition does not exist in North Carolina.

State's Death Rate Low

North Carolina has the lowest crude death rate in the United States, with the possible exception of two—Arkansas and Utah. When the latest comparable compilation of figures was published by the Federal Government for 1944, North Carolina's crude death rate was given as 8.3 per 1,000 population, while the rate for Arkansas and Utah was 8.2 each. Last year, North Carolina's crude death rate was given by the State Bureau of Vital Statistics as 7.6 per 1,000 population.

Without going further into generalities, let us now consider some of the definite figures for the first quarter of 1947 as they relate to the various causes of death in North Carolina.

For example, there had been only ten diphtheria deaths, as compared with 24 for the first three months of

1946. This was a tremendous decrease, from a percentage standpoint. Diphtheria is preventable; immunization during the first year of life now is required by law, and when and if there is general observance of this law, diphtheria will be a thing of the past in North Carolina, except in rare instances. There are exception to all human rules, of course.

During the period under consideration, there was not a single death from malaria reported anywhere in the State, as compared with 4 during the corresponding period of 1946. This is another disease that is being eradicated, commensurate with the elimination of the mosquitoes that transmit it.

Meningitis deaths also were on the decline as the year got under way, only ten having been reported, against sixteen during the first quarter of 1946. There was only one polio death reported, and no scarlet fever fatalities. Tuberculosis deaths for the period dropped from 279 to 221, while deaths attributable to heart disease declined from 1,961 to 1,843. Heart ailments continue to constitute the leading cause of death in North Carolina, regardless of the decline just reported. Figures for the subsequent months of 1947 may, and perhaps will, wipe out any early gains that may have been made.

Fewer Influenza Deaths

The number of influenza deaths was less than half the total for the corresponding period of the previous year, only 96 such deaths having occurred during the first quarter of this year, compared with 201 last year. There was a decrease of 21 in the number of deaths resulting from intracranial vascular lesions — or strokes — while the number of nephritis deaths for the quarter dropped from 860 last year to 666 this year, through March.

Pellagra deaths showed a decrease of 4, while pneumonia deaths dropped from 533 to 430.

Thus, we have a picture of vital statistics trends in North Carolina during the early months of 1947, but it should be remembered that trends often are upset and that the war against disease and death is a continuing fight, the results of which cannot be measured in terms of a few months, or even a few years. Gains must first be made and then they must be **held.** The fight against typhoid fever, for example, was an up and down business for many years—in fact, until the people had been educated to the point where they were willing to accept the principles of sanitation and immunization as a permanent policy, so to speak. The same was true in the fight against smallpox. Until vaccination became practically universal, there continued to be periodic outbreaks of this loathsome disease. Now, the adult who has not been immunized against smallpox is a rare exception. When vaccination ,after its discovery in England by Jenner in the last decade of the 1700's, was introduced to the people of the United States, near riots occurred in some communities when attempts were made to induce the people to submit to it. They feared it as they would have feared an invention of the devil. Fear is one of the obstacles that has retarded the march of scientific progress. Ignorance is another. The two, combined, constitute a formidable team—a fertile field for intolerance and superstition. Yet, there have been enough progressives all along to wage a successful battle against these factors, in the long-run, but the fight has been a hard one.

Public Less Skeptical

Science now has so thoroughly demonstrated its ability to discover and apply immunizing agents that the public has become far less skeptical than it was during the pioneer days.

The fight against preventable diseases has been more evolutionary than revolutionary—inch by inch, step by step, the onward march was made, gaining momentum with each passing year. The public now has reached the point where it **demands** the benefits of scientific discoveries that prevent and cure human ailments, regardless of their cost. The scarcity of penicillin, for ex-

ample, made the price of that substance almost prohibitive for a long while—and it is not sold at bargain counters now—yet, realizing its effectiveness, the ailing public has been willing to pay the price for the cure and the relief experienced following its administration.

The fiight for longevity and for the cure of diseases that have plagued humanity through countless years continues to encounter a formidable enemy against which the test tube can evolve no weapon—that is, the unwillingness of many to observe the **fundamental** rules of good health. Bodies that are crippled, warped and infected can often be repaired and made attractive; on the other hand, the most perfect specimen of physical sound humanity can be wrecked by the non-observance of those laws of self-preservation which call for right living.

Grade A Milk

BY WADE E. ELLER, SANITARIAN
Alleghany-Ashe-Watauga District Health Department
Boone, North Carolina

High quality is just as important in milk as it is in any other product or commercial item with which people concern themselves in their business affairs and their living. The grading of milk is based on the health significance of cleanliness or sanitation in the production, processing and distribution of this almost perfectly balanced food. Such diseases as typhoid fever, diphtheria, scarlet fever, tuberculosis, undulant fever, septic sore throat and probably others are quite frequently traced to improperly handled milk or diseased cows.

Dr. Rosenau, who prior to his death not long ago was head of the School of Public Health at the University of North Carolina, states in his **Preventive Medicine and Hygiene** that it is estimated that perhaps 7 per cent of all tuberculosis in man is of bovine origin. The **Milk Ordinance and Code** (under which the dairy program in this district is carried on) recommended by the United States Public Health Service (1939 edition) states on page 38: "The organisms of tuberculosis get into the milk either directly from the udder or indirectly through cow manure. Manure may become a source of infection directly in the case of active intestinal tuberculosis or indirectly in the case of respiratory tuberculosis as a result of coughing up the organisms and swallowing them. The infected manure then reaches the milk by dropping into it from the udder, etc., during milking or otherwise." This quotation will serve here, I think, to illustrate the cycle through which these dreaded disease germs can and often do travel from cow to man. Is it not important then that the consumer should demand a high quality milk?

The reason public health departments are charged with responsibility in so many places for the quality of milk served or sold to the public is that a strong wall of protection shall be built between the consumer of milk and the lurking germs of many diseases which so often find their way into man's body through the milk he drinks. To be sure milk is not the only conveyor of these germs; but when not properly produced and handled, it becomes a very effective means of spreading these diseases. The best guarantee of safety for the consumer lies in his insistence upon being supplied with a high quality of milk served to him in a

sanitary container, properly and plainly labeled Grade A with the name of the contents and the name and address of the producer. By this cautious means he may be reasonably sure of a chain of inspection all along the line back to the health of the cow from which the milk was derived, and the sanitation of the environmental conditions under which it was produced, handled and brought to his table for his consumption.

Without such insistence and caution by the consumer in demanding clean milk to drink and his willingness to pay reasonably for quality, the wall of his protection against many diseases would fall down as applied to milk. If it is important to be protected against these diseases, then it certainly becomes important to provide this protection at all the known points of danger.

From the standpoint of the producer, it is very important to him that he is supplied with the means of having his milk awarded the grade to which it is entitled under the rules and regulations and standards which have been set up and adopted by the District Board of Health, on the recommendations of the State Board of Health of North Carolina and of the United States Public Health Service. When these standards have been met by a dairyman and his Grade A rating awarded, he then receives a much better price for his milk as compared with the price of the ungraded product.

At the time of this writing, as I am informed, the difference in price is $1.80 per 100 pounds of milk or 15¢ per gallon. This difference is not constant, but a wide difference has been maintained for a long time, and it is unthinkable that a wide difference will fail to continue hereafter. Certainly as long as the consumer insists upon quality a difference will continue.

Alleghany, Ashe and Watauga counties are well adapted to the production of milk and much milk is produced here. In 1946 about $2,000,000 found their way into the pockets of the farmers in these three counties, and much of this large sum of money in turn went into the cash register of the business places. This sum of money is important and significant because it is proof positive of the substantial and stable nature of the business of milk production in this area. However, it is certain that milk production here has only reached a good beginning and that production can and probably will be increased to several times its present proportions. This should happen within a very few years. The writer has already been informed by representatives of two large buyers in the area that the receipts of milk in their plants for the immediate past winter months have greatly exceeded the receipts for the same months last year. Your attention is called to the extensive preparations by the milk buyers to receive milk in much larger quantities than ever before in this section of the State.

Quality milk producers, I think, can rely heavily on consumers who will continue to demand a quality product. They can depend upon good milk to remain a good food with a large demand for it. **Sorry milk like any other inferior product disgusts the customer.** The best milk will continue to bring the best price, and milk is most likely to continue as the most economical and stable farm product in this area. Low cost grass and low cost water supplies are big assets in milk production. Grazing is much better land-use than hillside plowing with its attendant erosion damage. Better feeding in winter and further improvement of pastures by well known practices will increase the milk-flow. Selective measures of culling cows and the use of better and better bulls will improve herds and not only result in more milk, but can be made to establish a surplus of high grade dairy cattle for sale to other areas.

Add to these procedures the economic elements of careful investment in the adequate barn outlay and the expenditure for equipment, the consistent attention and work needed to carry on a

good dairy program and strict attention to the marketing possibilities. with these things in mind, it does not yet appear just how large a place milk can take in the future of this fine mountain country. It is impossible to refrain from saying too that the character of a law abiding and self-respecting people is, and likely will remain, the greatest and best guarantee to the final consumer that he can obtain milk for his needs which will be both nutritional and safe for him to drink.

The people of North Carolina need and, I think, want the kind of good milk which our dairymen produce and it is highly probable they will always show their preference for it as compared with inferior milk dumped in our State from remote places. My friends and fellow mountain farmers! Let us produce and produce and produce high quality milk until such time as the actual supply far more nearly balances the demand than it does at present. Regardless of whatever trends or changes may appear in business in the years to come, it is my humble judgment that quality milk producers will continue to find relatively higher buying power in their milk checks as compared with the income from other sources.

The Principal and Health Education

BY JENNIE DOUGLASS-TAYLOR, EXECUTIVE DIRECTOR
North Carolina Student Health Association
Tarboro, North Carolina

Health, the first of the Seven Cardinal Principles of Secondary Education, has long been neglected in our school program. The White House Conference on Child Care and Protection has done much toward promoting emphasis upon the well being of the child in the home, school and community. Unfortunately, however, in many instances, only lip service has been given and the program has not been an actuality. The startling number of young men who were rejected during the first draft for the last war pointed up most vividly this fact to us. When over fifty per cent of our young men failed to qualify for military service it was discovered that the majority of these disabling defects were carried over from childhood. No one had felt sufficiently interested to have such defects corrected.

Never before in the history of this country have we known the need of a functional health education program as we know it today. Our bitter experiences have taught us a great lesson. This lesson must do us a great deal of good. The school has a definite responsibility in this matter and can no longer fail to do its duty.

The philosophy and purposes of health education are essentially the same as those of general education. Any program of health education to be effective must be based on and in keeping with a sound educational point of view. It has been thought advisable by authorities in the field that staff members get together and work out a definite point of view for their own school situation. In so doing, they should keep in mind the aims and objectives of health education which are the development of healthful, robust, well-adjusted individuals, in fact, individuals who practice wholesome living voluntarily and understand why and how they do it.

It would also be well to keep in mind, when formulating such a point of view, the statement as given by the Michigan Joint Committee on Health Education which says:

Health education, as a major phase

of education, is the sum of the experiences in daily living which best develop the individual in home, community and school. It is more than a subject to be taught within a specific period of the school day. Every administrator and every teacher at each grade level has a part to play in this teaching. The teaching of health cannot be entirely delegated to any one class period or to a special "health teacher." Its scope covers the social and emotional as well as the physical, and includes the interdependence of all of these. Health education recognizes that there are health aspects to all educational experiences, and is concerned that children learn to solve all problems of living with due consideration of health values. It points out how these health experiences can be safeguarded and developed.

It is the responsibility of the principal of the school to see to it that the program planned is executed. It is also his responsibility to make sure that the program meets the needs of his school and community.

The following books will aid the administrator in understanding his place in the program as well as helping him to get a picture of the program as a whole. These publications, their authors and publishers are as follows:

1. Health in Schools—The American Association of School Administrators. The National Education Association, Washington, D. C.
2. School Health Problems—Chenoweth and Selkirk, F. S. Crofts and Company, New York, N. Y.
3. Orientation in School Health—Langton Harper and Brothers Publishers, New York, N. Y.
4. Solving School Health Problems—Nyswander, The Commonwealth Fund, New York, N. Y.
5. Health Education—National Education Association and The American Medical Association. National Education Association, Washington, D. C.

All of the above named books will be inestimable value to both the principal and his staff.

The Negro principal has a greater responsibility in the promotion of health. No condition now facing the Negro is more grave and of greater importance than this problem of health. To say it is serious would express it mildly, because it is both serious and pathetic. Our attention to this fact is called, and alarmingly so, when we learn that the life expectancy of the Negro is by ten years shorter than that of the white race in this country.

Ira De Reid, in his sociological treatise, **In A Minor Key,** alluded to this tragedy when he said,

> The mere facts of physical life and death create some of Negro youth's more serious problems. Their education, economic efficiency, and vitality are affected. The racial population which embraces Negro youth has a higher birth rate, a higher sickness rate, and a higher death rate than is found among the white population in the United States.

Surely the Negro principal must find his place and make his contribution in helping the generations yet unborn be better citizens because they have healthy minds in healthy bodies.

Notes and Comment

BY ACTING EDITOR

EXPLANATION — Doubtless many of our readers will wonder why our August Number is appearing in October. Several months ago we were confronted with a paper shortage. It was necessary for us to choose between delaying our publication or changing the size of the **BULLETIN**. Since some sixty thousand readers have, through the years, become accustomed to the **BUL-**

LETIN in its present size and general make-up and since many of these readers regard the BULLETIN as a friend, we decided that it would be better to delay publication until paper of the proper size could be obtained. We will endeavor to catch up with the calendar as soon as possible. The delay in publication will, of course, effect our schedule for numbers directly related to current problems; for instance, this issue will contain some features directly related to the health of school children, subjects that are ordinarily dealt with in our September issue. The tuberculosis material which is normally carried in the November issue will appear in the September issue.

* * *

INFECTIOUS DISEASES play an important part in the lives of all young people. The weekly Health Bulletin of the Connecticut State Department of Health has been a frequent source of material which we have used in our BULLETIN.

Diphtheria Can Be Licked

"The past history of the disease, diphtheria, proves the fact that diphtheria can be controlled. This factor is so obvious that there is no reason for its failing except the lack of continued effort in carrying out our preventive measures to control this disease. When we look back on the number of cases that formerly appeared previous to the inception of immunizing procedures, we realize that as long as people lack the protection against diphtheria, that disease will appear in epidemic form. Yet, in failure of continuing to immunize our population and maintaining a check on this immunization, diphtheria can once more start out on its epidemic course and cause widespread havoc.

Diphtheria Can Be Prevented By Immunization

We have a recognized immunizing procedure for diphtheria. If this is carried out, it may be expected to prevent diphtheria completely. Yet, even though we have this procedure, parents through carelessness or lack of foresight, do not have their children protected. If the diphtheria germ should then appear in the area, their children may become victims of this disease.

Parents' Responsibility

By nature parents are apt to place the responsibility for the protection of their children and themselves on the physicians or public health agencies. Unfortunately, these people do not have control of your children. They may advise you to do certain things, offer you the means to do them, and yet they cannot force you to see that they are carried out. Accordingly, if children are not protected through immunizing procedures against diphtheria and should become ill from this disease, the responsibility rests solely on the parents.

How can this protection be obtained? If you wish to obtain the protection offered by immunization against diphtheria, you should visit your family physician and ask him to see that your child is properly immunized. As he has the interest of all his patients at heart, he will carry out those procedures best designed to protect your child.

When and how should diphtheria immunization be done? The first immunization treatment against diphtheria should be given before an infant has reached the age of one year. It may be given any time after six months, most often, around nine months. Following the giving of the course of immunization, a Schick test is done. This test will show whether the baby is fully immune or needs additional treatment to complete the immunity. It is then advised that another Schick test should be done on the child about the time of entering school, and additional immun-

izing treatment given if indicated. Still another Schick test should be given before entering high school and again treatment given if indicated. If all children could be immunized against diphtheria according to this plan, we could expect this dreadful disease to disappear.

If a parent is worried about his child even though that child has been immunized previously, it would be well to see the family physician and have the child checked. Re-immunization against diphtheria can be given if necessary.

Why Continue Immunization If The Disease Has Practically Disappeared?

In the case of any hazard, when the danger has passed by, we begin to feel safe again. In the parlance of boxing: "Our guard is down." It is at this time that a disease such as diphtheria can unsuspectingly begin its work. If we do not continue to maintain our barriers against this invasion by immunization, tests, and re-immunization if necessary, the disease may gain momentum to such an extent that it will become very difficult to control.

WHOOPING COUGH (Pertussis) STILL A SERIOUS DISEASE

The potential danger of whooping cough is forever present. More deaths are caused among children by whooping cough than any other communicable disease except diarrhea and enteritis. Whooping cough is especially dangerous to the very young children. So it is highly important to protect them from this dread disease when such protection is available. It is within recent years that methods to prevent this disease have been available and perfected to the point where, if used, the disease will be prevented. The state department of health has felt that with such an immunizing agent available it behooves parents to realize their responsibility to see that their children receive it.

As whooping cough is especially dangerous to very young children, it becomes highly important to immunize against this disease in infancy. Some authorities give the optimum age at about four months for the completion of this immunization. This indicates that it can be started at a very young age—without harm to the child. This affords protection when most needed, as the greatest mortality from this disease usually occurs under two years of age. There is no simple test available at present to check whether immunity has been established against whooping cough as is true in the case of diphtheria and scarlet fever. Therefore, the only method by which the level of immunity may be maintained after the child has received its initial immunization would be to see that the child receives a booster dose. This dose would then act to raise the immunity to a protective level if by chance it may have dropped to a danger point.

It is advisable for all parents who have not had their infants immunized to do so immediately. In the case where those children who have been immunized in the past and are in danger of being exposed to the disease, or who have been exposed, then a booster dose should be given to afford them the protection needed.

THE EYES

Good eyesight bears an important relationship to good health and the enjoyment of living. The eyes function almost continuously in our waking hours. If normally developed and properly cared for they furnish clear sight for close work and for enjoyment of distant views. The eyes work rapidly and efficiently in transmitting these images to the brain. They perform about a thousand movements in five minutes of reading.

Sight

The mechanism of the eyes is much like that of a camera. The lenses of the eyes bring light to focus upon light-sensitive nerve endings, or "film," in the retina. The amount of light admitted is governed by the iris, or "shutter." The optic nerves then transmit the

stimulus to the brain where the "film is developed" as a visual image. The picture which we then see consists of true recognition and relation of size, distance and color. But unlike a camera, which usually can be readily replaced when damaged, we are gifted with only one pair of eyes during lifetime.

Common Visual Defects

Among the more common troubles of eyesight are nearsightedness, farsightedness, and astigmatism. These defects are responsible for a large amount of discomfort and inefficiency. In the main, they are due in younger people to abnormalities in the shape of the eyeball. Nearsightedness occurs when the eyeball is longer than normal, causing the point of focus of distant objects to fall in front of the retina and resulting in indistinct vision. To compensate for this, such a person without glasses must bring the object closer to the eyes. In persons with farsightedness, the eyeball is shorter than normal, causing the point of focus to fall behind the retina and resulting also in blurred vision. In an attempt to adjust for this, the eye muscles work to correct the difficulty by contracting and making the lens thicker. This brings the point of focus forward until it falls on the retina. Though this gives clear vision, it requires excessive work of the muscles and causes muscular fatigue if continuous. The latter in turn causes headaches, pain in the eyes, nervousness, and general fatigue. Astigmatism is a type of visual defect due to an irregularity in the curvature of the cornea and lens portions of the eyeball through which the light rays enter. If either of these surfaces is flatter than normal, there is less bending of the light rays and the point of focus is thrown backward. If the curvature is greater than normal, the point of focus is farther forward. This defect also may cause severe eye strain.

Proper Illumination Essential

Good lighting is an important factor in the prevention of fatigue and eyestrain. The essentials of good lighting call for light that is adequate, uniform and steady. Glare and shadows should be avoided. The source of light should never be in the line of vision. For reading and close work the whole room should be well lighted and additional light centered upoon the work. Avoidance of glare from bright light over extended periods will prevent much unnecessary eye strain. Bright light striking the eye directly from its source or by reflection causes contraction of the iris, or "shutter," resulting in unequal stimuation of the retina.

Look To Your Eyes

The most effective service from your eyes can be expected when they are not abused but are treated with respect and given good care daily. Remember, they are used hour after hour, day after day, and year after year. By following a few simple precautions you will help to prevent undue eyestrain, conserve your eyesight and promote your general well-being.

1. Rest your eyes at frequent intervals when doing close work by looking at a blank wall or some distant object.

2. Use your eyes sparingly during illness or convalescence when they are particularly susceptible to fatigue.

3. Read with adequate, steady light, properly located at your left; sit erect and hold the printed matter 12-14 inches from the eyes and perpendicular to the line of vision. Avoid reading for extended periods in bed, or on moving vehicles.

4. The wearing of suitable goggles is useful for protection from dust and wind, from sun glare and reflected light from snow.

5. Defective vision may be due to a specific disease or may be aggravated by poor general health; conversely, eyestrain may give rise to symptoms in remote parts of the body. For early recognition and proper care, consult a physician at the first suspicion of eye trouble."

A Health Officer Reports

Those of us who are intrusted with the expenditure of other people's money have an obligation to render an accounting. All too many of our local health officers become so busily engaged in carrying out their program that they neglect to inform their own people of what has been done. It is refreshing, therefore, to receive a report entitled "Stepping up Our Health Program," a Five Year Progress Report of the Rockingham-Caswell District Health Department.

In his introduction to the report Dr. B. M. Drake, District Health Officer, states:

"In measuring the progress made in public health during the past five years, we must remember that a successful program is dependent on many factors and on many people. Without the active help of numerous groups and individuals in the two counties, it would be impossible to carry on any kind of preventive program. Therefore, we would like to express our appreciation of all the help and support we have received from various individuals and interested groups in both counties.

"In particular, we feel that especial thanks are due the Boards of Health and Commissioners of both counties, both county Tuberculosis Associations, the Welfare Departments, and the Junior Service League of Reidsville.

"The Rockingham County Library has helped us in many ways. The Y.M.C.A. and the Spray Civic Association have done more than their share."

The report is neatly mimeographed, well illustrated and has column graphs indicating progress from year to year. There are sections dealing with tuberculosis, other communicable diseases, school health, sanitation, health education and nutrition, correctional clinics, maternal and child health and venereal disease. In each of these fields remarkable progress is shown.

Perhaps the financial report gives the best assurance that the tax payers of this Health District are pleased with their health program. During the fiscal year 1942-1943, the State Board of Health contributed $1800.00, the Federal Government, $8,164 and the tax payers of the District $10,650 to the Health Department Budget. During the year, 1946-1947 the State's part was $3,520, the Federal Government made available $12,420, while local funds amounted to $19,490. It would seem, therefore, that the people of the Health District are well pleased with their Health Program.

Dentistry Can Play Important Role In Preventing Deafness

University Of Pennsylvania Studies Show Connection Of Hearing Defects With Dental "Bite"

Many of the 10 million Americans who suffer with impaired hearing should be sent to a dentist, according to an article in the current issue of the **Archives of Otolaryngology**, published by the American Medical Association. And, says the writer, many fewer Americans would be so afflicted if more attention were paid to the role that intelligent dentistry can play in the prevention and control of deafness.

The writer, David J. Goodfriend, D.D.S. of Philadelphia, is reporting on studies carried out in the department of dentistry, medicine and psychology of the University of Pennsylvania. Workers in this field, says Dr. Goodfriend, have established the importance of abnormalities of dental bite in pro-

ducing certain hearing troubles "as thoroughly as Koch proved that the tubercle bacillus causes tuberculosis." Their studies point to dental treatment as the proper therapy.

Anatomical studies show that any abnormality of dental bite directly affects the eustachian tube, which brings about communication between the middle ear and the pharynx by adjusting air pressure in the middle ear to that of the air outside. Dr. Goodfriend's article does not claim that some such condition is at the root of every hearing defect, nor that the one automatically brings about the other. But it does state that such abnormalities "probably influence about 40 per cent of all deafness."

Dr. Goodfriend found that:

At the University's special ear and throat clinic, 23 of the first 25 patients with hearing complaints but without any abnormalities in the ear itself showed abnormalities of bite, or some position of the teeth which interfered with proper movements of the jaw in chewing.

Studies of a group of 168 dental students showed that 55 per cent had dental malocclusions; the hearing of this group was 13 per cent less than that of the other 45 per cent.

The study indicates that proper dental treatment of such cases often brings excellent results, particularly in younger patients. Seventy per cent of all deafness is of the progressive adult type which up to now has been considered incurable. Speaking from the University's studies and from 21 years of clinical experience, Dr. Goodfriend asserts that in certain patients proper dental treatment will help even progressive deafness of short duration, and in others it will slow down the rate at which the hearing is deteriorating. Furthermore, it will cure certain patients with neuralgia, or nervous pain, and dizziness due to ear trouble. The patient with a ringing in the ears may also be benefited.

Since so much depends upon how long the hearing has been disturbed, however, the keynote of this work is prevention. Writes Dr. Goodfriend:

"These facts should encourage the earliest practical treatment of dental abnormalities of bite as a preventive procedure."

Average Length Of Life Since 1847 Increased From 40 To 67

A. M. A. President Says American Medicine 'Is Blazing New Trails'—Working To Improve Health Of All

"In 1847 the average length of life of our people was about 40 years; in 1947, this has increased to almost 67 years. Such an accomplishment may be regarded as one of the major attainments of modern science," according to Edward L. Bortz, M.D., President of the American Medical Association.

Writing in the current issue of **Hygeia**, health magazine of the American Medical Association, Dr. Bortz points out that "medical science in the last 25 years has discovered remarkably effective weapons for the control of infectious diseases. Important new information with reference to nutrition, disorders of the glands, the control of diabetes and obesity, and our knowledge of various nervous and mental disorders have made the doctor a more effective public servant than in any previous time in the history of humanity.

"We are indeed a more healthy people today. We are living longer. The mature and productive years are increased in number, and the ravages of old age may be delayed if the public will cooperate with the medical profession in utilizing available information for the control of the diseases

which are the common lot of all people."

Continuing, the article states in part:

"Probably no other group has a keener sense of social responsibility than has the medical profession. . . . More and more attention is given to the preventive aspects of disease. This includes an appreciation of nutritional requirements of the body, plus a number of other important necessities, such as rest, recreation and healthy mental outlook. These factors represent some of the principal interests of the modern doctor.

" Organized medicine has always been a strenuous exponent of the highest type of medical service for all people, regardless of financial status. The unsolved questions of an economic nature are being approached with the same sense of scientific objectivity, free from emotional heat, as science utilizes in its laboratories and clinics.

"To facilitate international exchange of health information, the control of disease, and medical research, a world medical association is now in process of formation. American doctors are deeply interested in this worthy project. Recently two distinguished members of the Board of Trustees of the American Medical Association flew to London to attend an organizational meeting with representatives of other lands.

"As international bonds are strengthened in the fields of science, medicine, the arts, and culture, a better understanding will be brought about for people of the various nations of the world. As leaders in the medical realm communicate with one another across national boundaries, they bring to their own people the benefits of research and investigations in the fields of medical science which will improve the health of various populations. When folks understand each other and contribute to the welfare and happiness of members of the family of nations, the irritations and misunderstanding that cause so much unhappiness should be more susceptible of compromise.

"Doctors are vitally interested in the broader problems of national security and international stability. The American Medical Association is vigorously engaged in promoting the dissemination of information that will improve the health of the people of all nations.

"American medicine is blazing new trails; it is moving in forward directions to a day of better understanding and finer health for people near and far. The leaders of medicine in the United States, supported by a superb staff of highly qualified colleagues and experts in the various special fields of administration, health education, medical economics, legislation and research, are throwing all their energy into the search for more adequate control of the disorders that destroy health and shorten life.

"The American people can rest assured that the doctors of the nation will continue to find new methods for the control of disease, improved measures for the public health, and an enlarged scope for the enjoyment of human existence. To these high aims the American Medical Association dedicates its interests and support."

Sums Spent To Educate Public About Cancer Bring Dividends

Survey Shows Patients Seeking Medical Attention Sooner When Presence Of Cancer Is Suspected

Large sums of money used in the past few years to educate the public in recognition of the early symptoms of cancer have already shown some effect, according to two members of the Medical Department of New York City's Memorial Hospital.

Writing in the September 6 issue of **The Journal of the American Medical Association,** John E. Leach, M.D., and Guy F. Robbins, M.D., a National Cancer Institute Fellow, report the results of a recent survey of 500 new patients at Memorial Hospital's internationally known cancer clinic. Comparing the results with those of a previous study covering the period from 1923 to 1938, they say that "significant progress is being made—people in this metropolitan area are seeking medical attention sooner."

In spite of this indication of progress, the weak spot in the current drive against cancer is still, say the writers, "in the period before therapy—the lapse of time between first symptoms and the beginning of treatment. This includes the time from first symptoms to first physician, from first physician to diagnosis and from diagnosis to therapy." Because of undue delay in diagnosis or treatment there has been little real reduction in the rate of deaths from cancer—a reduction made possible through great strides in methods of cancer diagnosis as well as in surgical and radiation therapy.

The doctors stated that in 193 of these 500 cases physicians seem to have been partly or entirely responsible for such delay. Since the survey was based on information obtained from patients alone, the writers believe that some patients may have minimized their own negligence. Furthermore, during the period of the study there was still an unfavorable wartime ratio of physicians to patients. Without intending "to draw criticism to the medical profession's role in the fight against cancer," Dr. Leach and Dr. Robbins point out:

"The old saying 'more is missed in medicine by not looking than by not knowing' is particularly applicable in the diagnosis of cancer today. . . . In over 80 per cent of the patients in this study a diagnosis of cancer could have been suspected or made by the initial physician if only a careful history and physical examination had been made. . . . Certainly one way to make real progress in the reduction of delay is the encouragement of annual complete physical examinations in all patients, particularly those 40 years of age and over. . . .

"It was evident from the replies of these patients that the initial physician in numerous instances had failed to impress the patient with the seriousness of the illness and the importance of dealing with it promptly. . . . The treatment of cancer is as much an emergency as a fracture and much more important to the patient's life."

The writers conclude:

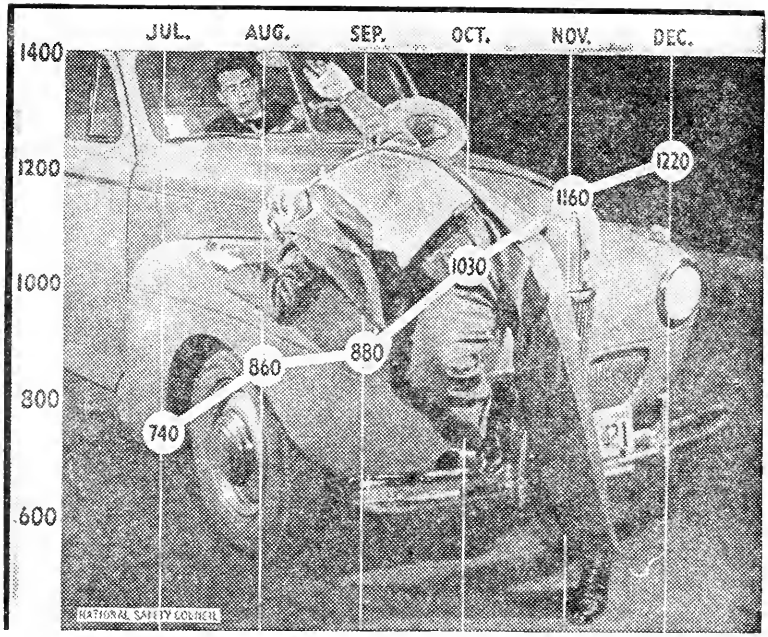
"The hope of making appreciable immediate reductions in cancer mortality lies with the individual physicians. The cancer clinic can reach but relatively few persons. The physician, whether he be general practitioner or specialist, internist or surgeon, must operate his own cancer detection clinic in his office and in his hospital service, before any reduction in cancer mortality is made. . . . The means for reducing morbidity and mortality due to cancer are at hand now. They remain to be used."

Cost Of Operating Medical Schools For '47-48 Will Be $43,000,000

"The cost of operating the medical schools of this country, exclusive of their teaching hospitals, will be somewhat more than $43,000,000 for the academic year 1947-1948. Less than one third of this sum will be obtained from student fees," according to an editorial in the August 16 issue of **The Journal of the American Medical Association.**

The editorial states in part:

"The fact that during the coming year medical schools will receive more than $31,000,000 from endowments, general university funds, gifts and tax



sources is good evidence of the determination of university administrators, trustees and legislators to continue to provide a program of high quality in the field of medical education. That such a policy results in a rich return to the people in health, happiness and economic productivity has been demonstrated by experience. It is important, however, to point out that at least one fourth of our medical schools are still operating on grossly inadequate budgets and that the efforts of many schools are limited by budgets that are but slightly less inadequate. The solution to the problem of how to increase the financial support of medical education is urgently sought in many quarters. During the coming year medical school budgets will be supplemented by grants totaling about $10,000,000 from foundations, governmental agencies and other extra university sources. Relatively few of these grants are designed primarily to strengthen educational programs. The majority are awarded for the prosecution of specific research problems. It cannot be denied that many grants for research usually benefit the educational activities of the institution receiving them. However, a question that could be raised is whether the fundamental cause of medical education and medical science would be served if more grants were available for the specific purpose of helping schools strengthen their educational activities. Those responsible for establishing and awarding grants should consider this problem. . . . A policy of giving more direct financial support to the educational activities of medical schools can be fully justified. As effective research is the product of trained minds whose scientific curiosity has been stimulated, it is reasonable to believe that a greater investment by foundations and similar groups in improving the fundamental training of physicians as a class will ultimately bring a much larger return in scientific knowledge and scientific practice than will the expenditure of funds almost exclusively in support of the special activities of a few selected investigators."

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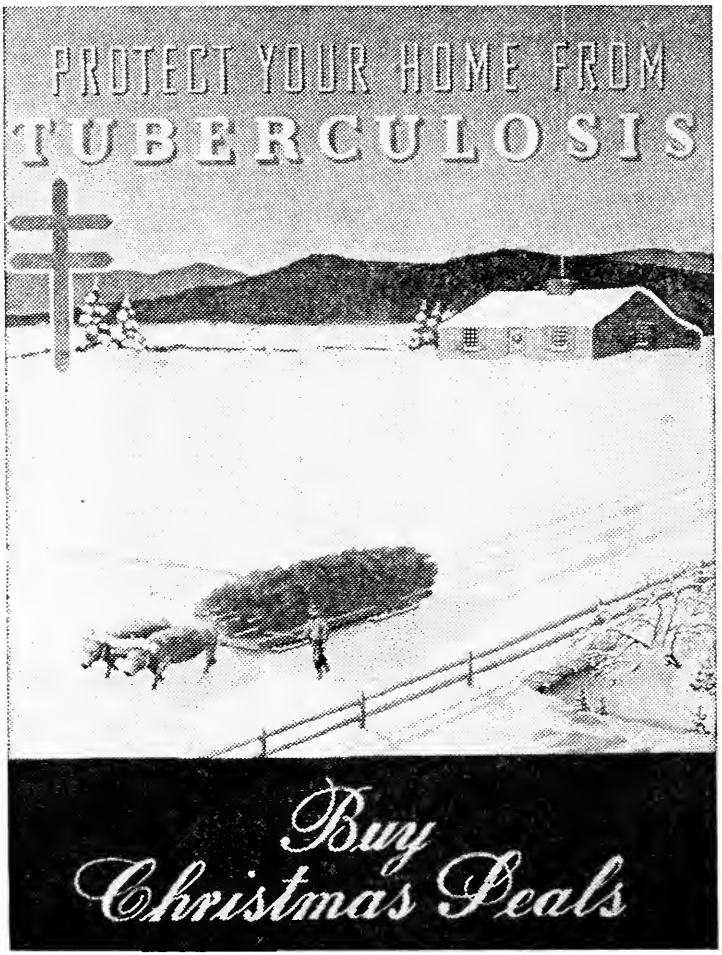

CONTENTS

THE Health Bulletin

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Vol. 62 SEPTEMBER, 1947 No. 9

CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Teamwork

By Mrs. Paul P. McCain, 1947 State Seal Sale Chairman
Southern Pines, North Carolina

WE are coming again to that time of year when our thoughts turn to the Tuberculosis Christmas Seal. This year we have not only a pretty seal but a very suggestive one—a team of oxen pulling a sled of Christmas trees. What a wonderful thought—TEAMWORK.

Teamwork has saved 4,000,000 lives in the United States since the organization of the National Tuberculosis Association in 1904. It has saved 4605 lives each year in North Carolina. Conservative figures say each death costs the State $3000 — thus, a saving of $4,000,000 per year. This same cooperation has brought about an 80% reduction in the death rate in the last 40 years. Teamwork in selling Christmas Seals and in Tuberculosis Education has had a great part in this fight. The splendid cooperation between tuberculosis leaders and governmental authorities in the providing of diagnostic facilities and beds for those needing treatment has been very important. We are proud of the showing of North Carolina in 1946—28.5 deaths per 100,000 against a national average of 35.9 deaths per 100,000. Another important factor in this overall teamwork picture is the part played in the fight by those who have the disease themselves. More power to the ex-curers in our State!

75% of the money obtained from the sale of seals is used for a local program; 20% is sent to the North Carolina Tuberculosis Association. (These percentages are 80% and 15% where there is a local full-time paid worker.) The remaining 5% is sent to the National Tuberculosis Association. The money is spent on such important projects as: education, sponsoring clinics, rehabilitation — ⅓ of ex-tuberculosis patients return for treatment; this can be stopped—and research. May God bless all groups as they work together —especially the Research agencies. May a Cure be found in our day. Until that great day comes, however, we must continue our teamwork in the selling of these ONE CENT seals and in teaching the urgency of yearly examinations and X-rays.

But is MORE teamwork needed? Yes, as long as there is a single case left! 1274 people died in North Carolina in 1946 from this preventable disease. Tuberculosis still leads the list in deaths from communicable disease. It kills more people between the ages of 15 and 35 than any other disease. Only teamwork will carry the fight to a successful finish.

Best Wishes for a Good and Healthy Christmas.

Christmas Seals Around The World

BY C. L. NEWCOMB, DIRECTOR, SEAL SALE
National Tuberculosis Association
1790 Broadway, New York 19, New York

THE headline under which we fire our opening gun of the forty-first annual Christmas Seal Sale in the United States has especial significance because it also marks the resumption of the organized fight against tuberculosis in all parts of the world, after a dormant period in certain European countries. From July 26 to August 1, a meeting was being held in Paris of the Council of the International Union against Tuberculosis—the world-wide body that has brought together TB fighters from all countries.

More than any other factor, the Christmas Seal has been the medium for unifying the effort and demands of people that tuberculosis be fought to a finish. No civilized country lacks the knowledge to knock out tuberculosis, although many countries in other parts of the world lack the trained personnel and equipment needed to put the knowledge into action.

If at time it seems that we are just sparring with the foe, it usually turns out that we have discovered new weaknesses that make our enemy more vulnerable. No better example than the modern miniature X-ray can be found. After working for years with the tuberculin test as a means of finding cases early, and making sure but slow progress, the roentgenologist gave us the miniature film, adapted to the same technique as the large film—but at a cost where mass X-raying is practicable.

Many of you know that the death rate from tuberculosis continues to decline—not much each year, but steadily. There are many reasons for this but space is lacking here to explore them. The important point is that we cannot let up when victory is so clearly in sight. It is going to require close to twenty million dollars in this year's Christmas Seal Sale to finance the work of the affiliated tuberculosis associations fighting under the red Double-Barred Cross. Organized forces, combined to fight shoulder to shoulder, can win.

Research is bringing new light on its sector, public health departments have more actively joined in the fight, doctors and nurses are giving yeoman service as they have in the past. And now the advertising industry has entered the picture through the educational campaign of The Advertising Council, Inc. On every hand we have the best of evidence that the public wants to furnish the dollars that it takes to support our work. People in all walks of life, the world over, all believe in us.

In this forty-first Christmas Seal Sale in the United States we cannot lag in the supreme effort necessary to make Christmas Seals live up to their reputation for getting things done. As one of our old time humorists said of the postage stamps, "they stick to it."

Research In Tuberculosis

BY HENRY STUART WILLIS, M.D., SUPERINTENDENT
State Sanatoria, Sanatorium, North Carolina

ALWAYS down through the ages there have been those who have asked questions about the phenomena around them. They have planned schemes that would test nature's workings and answer the eternal "why."

History records that man's progress has been spotty and irregular (of course from many causes) and that his advancement has been put forward mightily by great individual discoveries or efforts which have nearly always led to many subsidiary forays into the unknown.

In medicine today we hear much of research. But what do we mean by the term? Galdston has recently advanced the interesting thought that the activities in this field may be divided into the categories of "search" and "research." He would apply the term search to efforts at the acquisition of fact and would have research mean the relating of fact to function: thus, imagination and the interpretation of fact would fit into the province of research. In this scheme the anatomical studies of Vesalius, for instance, are the product of search; those of Claude Bernard, research. Whether search or research, the world today is experiencing a gerat unfolding of fact and great expression of the "dynamic inter-relationship" of fact.

There must be a certain background to research. Facts of modern physics which made research on the atomic bomb successful have been accumulated gradually since the time of Sir Isaac Newton in the 17th century, but factual data behind the tubercle bacillus are not yet seventy years old. However, this by no means indicates that we must wait for the passage of time to do experimental and clinical study in the field of tuberculosis. It means rather that the field is large and the door is open. It means that the many unknowns in the field stand as a challenge. One prime lack of knowledge may be seen in the fact that those who have worked longest in the field are not even in agreement on the fundamental question of whether immunization against the disease should be attempted. You agree that there ought to be some sort of atomic **Blitz** which would remove tuberculosis from the world for all time; but you will agree also that more knowledge and wider use of existing knowledge are needed.

Do we need more research today? Tuberculosis, long the chief killer, is now in seventh place as a cause of death. New methods of diagnosis find cases early. Modern sanatoria abound, modern modes of medical and surgical treatment are in use. Many people live today who would have died of this disease if earlier death rates still prevailed. Some ask whether the disease is not under reasonably good control. But the fact is that is remains the chief killer, except for accidents, in the most productive and active ages (20 to 35). Tuberculosis is still a challenge which presents many basic problems and unknowns. We ask ourselves why people react in one way to primary infection and in another way to reinfection, but we do not have the answer. Or why the very young are prone to miliary tuberculosis and meningitis. Have we fathomed the nature of the factors which predispose to tuberculosis—that tend to convert mere infection on the one hand to clinical disease on the other? Why are we still unable to provide specific protection against this disease? When and under what conditions will we use BCG? Are we doing all we should in the revival of chemotherapy? These two latter subjects dangle most intriguing possibilities before us in tantalizing fashion, but we are still far from essential guidelines. In the field of therapy we may wisely call for a new interpretation of rest and a new and more rational application of it. We are far from uniformity in several of the most acceptable measures of surgical treatment. In our own clinical contacts, each one of us daily feels the need of more knowledge, more wisdom.

Do we need research? Ask the man who is presented with a serious diagnostic or therapeutic problem at the bedside. Many men whose work brings them daily into contact with sick people have primary interest in the practical application of medical knowledge and are often impatient with so-called basic or fundamental research. Ideally everyone in medicine should have an

absorbing interest in the unexplained phenomena before him. The question "why" should repeat itself so forcibly as to drive him to satisfy his questioning curiosity. We become research workers in proportion to the intensity of our interest, the range of our ingenuity and the depth of our understanding and wisdom. Some carry the "why" and "how" and "what" remotely in mind and find study difficult; others strive constantly to learn the answers. Thus are searchers made, researches performed; thus are conditions set up to elucidate fact and to test validity of apparent fact or circumstance. Can we not, then, say properly that research is a state of mind—an attitude of life—a questioning of the hows and whys of the unknown about us? If so, many can be researchers in spirit and in truth.

A fair amount of research in tuberculosis is currently being carried on, as the AMERICAN REVIEW and other medical journals bear witness. This is mostly done on an individual basis although some of it represents planned group-effort. The Committee on Medical Research of the National Tuberculosis Association supports a good deal of study. A word about its activities may be in order. In 1920, Gerald Webb, then President of the Association, named to a Committee on Medical Research, Paul Lewis, Allen K. Krause, and Wm. Charles White, the latter chairman. The Committee established its plan. It had but little money. This it wished to invest wisely. By expending small sums for technical assistance and materials the Committee could enable the research worker to utilize his skill and to use the property, equipment and overhead of the university or institution which employed him. The Committee established two general approaches: (1) correlated, cooperative research; (2) individual research.

The Committee felt that greater progress would be made under a scheme of integration and correlation than by individual effort alone. To this end, broad subjects on which more knowledge was imperative were selected. Workers skilled in specific fields were asked to participate and thus to conduct their work under Committee sponsorship. This scheme of coordinating research had precedent. It appears that Ehrlich operated a research project in which workers applied their skills in the search for a specific chemotherapeutic agent against syphilis. These workers devised a great number of arsenical preparations which they studied pharmacologically, experimentally on animals and clinically on man before the famous 606 was produced.

The integrated investigation of the Committee stands as its best in the chemical work it has sponsored. In this work Long's synthetic medium was chosen for growing the tubercle bacillus; after growth the medium became the substance upon which Long, Seibert and fellow workers strove for the chemical purification of tuberculin. The tubercle bacilli from the cultures, in the hands of Johnson and later of Anderson, underwent chemical analysis and several chemical entities were isolated which, in turn, were studied biologically in animals by Sabin and her associates in an effort to identify fractions of the bacillus which might be responsible for symptoms of the disease.

The Committee's second approach concerned the support of research efforts of individual investigators. One of the best examples of the type of work supported in this way may be seen in William Snow Miller's anatomical studies of the lung. By providing assisting personnel, equipment and materials, the Committee made it possible for this investigator to extend greatly our knowledge of the lymphatics and blood vessels in the lungs and their relationship to the formation of tubercle, the nature of reticulum and its connection with the progression and healing of tuberculosis, and many other anatomical and pathological relationships in human pulmonary tuberculosis.

It is not the purpose of this paper to delineate items in the history of the

Committee, which has been done by Nicolson, but rather to indicate by these few examples the general plan on which the Committee has operated since its inception. The range of its work has been relatively broad. It cooperated with the Tuberculosis Control Division of the U. S. Public Health Service and The Henry Phipps Institute in launching the now well-known study of BCG among Indians. More recently it sponsored the study of minimal lesions in conjuction with the Public Health Service.

At present there is under way a group of studies on the chemistry of the tubercle bacillus and the application of various chemical fractions of the bacillus to the animal body. A specific study is in progress on the carbohydrates of the bacillus and two on problems in respiratory physiology; two on the factors responsible for caseation and softening. Another study on histoplasmosis seeks especially to find, if possible, evidence of early infection and its role in causing intrathoracic calcification. Also in contemplation is the subject, among others, of sterilization of the air by germicidal lamps.

Of recent years the plea has been voiced by many for more attention to clinical problems—more study of bedside medicine—more research into the phenomena that shroud the sick man and continue to pose unanswered problems for the physician. In general medicine, research in nonclinical subjects has prospered rather better than those that are strictly clinical, and in tuberculosis this tendency has been marked. Look at the REVIEW. The editor prints all the presentable clinical material that comes to him—yet the dearth of papers on clinical investigations is obvious. Why do we not turn our attention more often to bedside medicine? Why is it that, when clinicians far outnumber those in nonclinical fields, the few among the latter submit the majority of the studies? As an example, the patient's cough offers a real problem which might be studied. There are good reasons for the patient to raise sputum. But when cough is excessive or unproductive, a dozen of us may have a dozen different approaches. But most of us will give codeine. If the cough is not controlled, we increase the dose, not knowing whether this narcotic paralyzes the action of the cilia and thus hinders the raising of sputum. We realize eventually that the cough which a quarter grain will not control is also refractory to a half or a whole grain. Why should we feel that a subject like this is simply unfathomable? Why cannot someone study cough, relate it to the type and location of disease, to posture and ease of expectoration, to ciliary action, and do the thing on a basis of scientific definition that will give us some useful answers? Or take anemia in tuberculosis which also is a relatively unexplored field, or the utilization of food by patients with different types of tuberculosis and complications. There is need for controlled scientific study of bedside problems.

The Committee on Medical Research has a schedule to keep. It is continuing its sponsorship of several of its basic studies. At the same time it recognizes the value and the desirability of attention to individual research in clinical, pathological and bacteriological domains and is prepared to underwrite such increasingly. It is well known that the Committee receives and grants requests from individuals for support of particular studies. Whoever has a study in mind will receive full consideration if he submits his problem to the Committee. To be sure the basis of the study must appear to be sound. The application must bear evidence of a well-thought-out scheme and must include a proposed budget. But the invitation is a standing one. The Committee is ready to help. Will you avail yourself of the opportunity—you who criticize the present scheme and you who do not?

Let us do more study. Let us say with the writer of Proverbs "where there is no vision the people perish." Expan-

sion of roentgenology, of thoracic surgery, of the rationale of bed-rest, of bacteriology, physiology and pathology —all these may lead to magnificent elaboration of fact and attitude. It stands as a challenge to all of us.

The 1947 Christmas Seal

BY WALTER G. JAMES, FIELD SECRETARY
North Carolina Tuberculosis Association
Raleigh, North Carolina

THE 1947 Chirstmas Seal is an excellent interpretation of the spirit of Christmas and the purpose of the annual Christmas Seal Sale. The team of oxen hauling a load of Christmas trees pictorially depicts the great importance of cooperation in a task to be done. This scene may be said to exemplify the need for cooperation of many forces; perhaps a government and her people, the patient and the doctor, and other agencies which go into the making of a successful program. The team of oxen in the Seal were trained to work; to work, in a cooperative unit. Needless to say, it is understood that by "pulling together" the eradication of tuberculosis is no impossible task. It can be done with this spirit.

Raymond Lufkin is Designer of Seal

Raymond Lufkin, the designer of the 1947 Seal and poster, was born in Salem, Massachusetts. His career has been a long and distinguished one, starting at the age of nine when the BOSTON HERALD published a prize winning pen and ink sketch for which he received one dollar.

His favorite medium is black and white which he has used to illustrate many children's books for some of the leading publishers of the country. A unique contribution to both American art and illustrated American history is made by Lufkin's outstanding series, in color, of the symbolic happenings on the twelve principal rivers of the United States.

During World War II, his bond posters won for him a special citation from the Treasury Department. In addition, he produced dozens of maps for military purposes. Always interested in education and community life, Mr. Lufkin is the president of the Citizens Association in Tenafly, New Jersey, where he lives and has his studio.

The Christmas Seal Sale is the sole support of the North Carolina Tuberculosis Association and its affiliates. 75% of all funds collected is retained in the local community for a program in tuberculosis control. This figure is raised to 80% if an executive secretary is employed in the county. 20% of the money collected is delegated to the North Carolina Tuberculosis Association for its support, and 5% goes to the National Tuberculosis Association. These three organizations work in close cooperation in the fight to control and eradicate tuberculosis.

Tuberculosis Education Among Negroes Of North Carolina

BY VELMA TURNAGE, FIELD SECRETARY
North Carolina Tuberculosis Association
Raleigh, North Carolina

EVER since the organization of the North Carolina Tuberculosis Association in 1906, education has been one of its chief objectives. It was the first State association in the United States to employ—in 1917—a Negroe health education worker, Mrs. Florence Williams, who is now employed by the Chicago and Cook County Tuberculosis Association. With this early interest manifested in a group whose death rate was and still is comparatively high, it is not surprising that the original assignment of the newly employed Negro field worker was the development of an educational program for correcting misconceptions about tuberculosis and for getting true facts about the disease before the people.

In attempting to plan such a program conscientious effort was made not to look on tuberculosis as an isolated problem but as one of the communicable diseases constituting a problem that cuts across many areas, thus necessitating a broad program adapted to the need of the people in the many and varied communities of the State.

As aims and objectives of the proposed program the following were advanced:

1. To conduct an educational campaign against tuberculosis and to promote better health procedures.
2. To determine unmet health needs in the State and to help provide means for meeting such needs.
3. To aid in case-finding by encouraging the public to have health examinations including X-rays.
4. To help local workers evaluate their programs and assist, advise and plan further activities for carrying them out.
5. To assist with personnel training by helping to provide or sponsor institutes and workshops and by supplying educational materials.
6. To cooperate with all other agencies concerned with the improvement of the community's health and welfare.

Planning a program of health education designed to inform all the people on the nature of tuberculosis is not easy. Implementation of such a program is far from simple. An attempt to implement this program through community organization, school health programs and adult groups is now being made.

In six communities of the State Negro health committees have been organized with such duties as the following:

To learn the basic facts regarding tuberculosis, how it is spread, and the simple measures necessary for protection.

To acquaint themselves with the extent of the tuberculosis problem in their communities.

To participate in community planning for better health and tuberculosis control, and

To encourage and make possible a program of adult education.

These committees have specific responsibilities in case-finding, health education and cooperation. There is at least one city health council that began as a local tuberculosis committee.

At this writing a leaflet entitled "Suggested Activities of Negro Committees in Tuberculosis Control Programs" is being prepared for publication.

Many opportunities for adult educa-

tion have presented themselves through the State and local programs of mass X-raying. More than sixteen institutes have been planned and participated in which were designed to help people understand the control program and to increase participation therein. Institutes have been held for ministers, doctors and nurses.

School health has also come into the picture for its share of emphasis. This phase of the work has been divided into three parts—in-service training, pre-service training, and public school education.

The in-service program helped make it possible for 36 teachers to attend the school health conference at the North Carolina College in Durham. Lectures and conferences, individual and group, were offered to this group by a member of the staff of the State Association. In addition to jointly underwriting this project, the North Carolina Students Good Health Association is aided financially in carrying out its program by the North Carolina Tuberculosis Association.

Health institutes for principals were planned and carried out in cooperation with the School Health Coordinating Service prior to the opening date of school in Warren, Beaufort, Northampton, and Halifax counties. The association made available the services of an additional health consultant for three of these institutes.

In the pre-service activities the Negro field worker has gone into the college classroom and planned and discussed programs there in preference to chapel talks. However, these are also given when requested.

Individual conferences were held with 27 students in Hood Theological Seminary. This was an attempt to evaluate the students' knowledge of a minister's role in a health education program and to emphasize the part that a minister can play in a tuberculosis control program.

Health talks were made to student councils and all the elementary pupils in the Charlotte schools. High school and college students representing 33 counties and eight colleges entered the Essay Contest. Talks were made and movies shown to many of these groups. Question and answer sessions were conducted in which misconceptions about tuberculosis were corrected and true facts emphasized. If the essays sent into the State office can be used as criteria, our population composed of these students as adult citizens will know the personal and public health measures necessary for the prevention and control of communicable disease.

Significant in this effort was the number of schools that broadened their project to include adults in the community. One such project won first prize in the National Contest.

To have such projects permeate the communities is gratifying, for it has been thoroughly demonstrated that Negroes upon becoming intelligently informed of a problem and given a chance to participate are willing to cooperate in its solution.

Basic Activities of Your North Carolina Tuberculosis Association

BY FRANK W. WEBSTER, EXECUTIVE SECRETARY
North Carolina Tuberculosis Association
Raleigh, North Carolina

THE North Carolina Tuberculosis Association maintains as its chief aim the carrying on of a continuous campaign for the control and eradication of tuberculosis. All of its activities are directed toward this aim.

Solely supported by the purchase of Christmas Seals in the annual Christ-

mas campaign, the North Carolina Tuberculosis Association is a non-official health agency. It is affiliated with the National Tuberculosis Association and 132 organizations and committees throughout the State. Thirty-five of these have associations along the same lines as the State Association, and twenty-seven have paid executive secretaries. The income derived from the various Seal Sales is divided in the following manner: 75% is retained by the county association or committee; 20% goes for State office maintenance; and 5% is sent to the National Tuberculosis Association. If a full time paid secretary is working in the county, 80% is retained locally. The three associations work together in close harmony in their common goal—the immediate prevention and eventual eradication of tuberculosis.

With its chief aim the education of the public about tuberculosis, all the activities of the North Carolina Tuberculosis Association have been planned with this in mind. Some of the basic activities of the association are:

Coordination and Cooperation—There would be no job accomplished in the field of tuberculosis control if there was no cooperation among the various community organizations and agencies. The community must work as a whole unit. During the past year, the program of NCTA was coordinated with the work of other agencies interested in public health and welfare. Some of these agencies were:

N. C. State Board of Health and local health departments
U. S. Public Health Service
N. C. State Board of Charities and Public Welfare and local welfare departments
N. C. Department of Public Instruction and local school personnel
N. C. State Division of Vocational Rehabilitation and its local representatives
N. C. State Nurse's Association and its local affiliates
N. C. Federation of Woman's Clubs and its local affiliates
N. C. Congress of Parents and Teachers and its local affiliates
N. C. Sanatoria and local sanatoria officials
N. C. School-Health Coordinating Service
N. C. Student Health Association
N. C. Public Health Association
N. C. Academy of Public Health
N. C. Conference for Social Service
N. C. Social Hygiene Society
Medical and public health schools
Various colleges and universities, white and colored
Veteran organizations
Civic clubs and organizations
Church groups
Community Chests and Community Councils.

Field Service—This phase of the State Office's work is most important. The staff of the State Association made visits to every county in the State. 650 field trips were made to these counties to assist and advise on the various phases of tuberculosis control work; a total of 65,000 miles, 750 man-days were spent in the field. Talks and lectures were given to approximately 3,000 people, and 1,500 individual conferences and group interviews were held.

Personnel Training—The State Association offered personnel training on both an in-service training and new worker basis. This training was accomplished by conducting institutes, conferences and symposia. Assistance was also given other agencies in the planning of meetings which they sponsored. Special tuberculosis training was provided for physicians, nurses, teachers, ministers, and public health workers. Special financial assistance was given to the School of Public Health at the University of North Carolina and the North Carolina College for Negroes. In addition, the State association gave assistance in the training of tuberculosis workers from all over the State.

Supply Service—The North Carolina Tuberculosis Association buys materials such as leaflets, pamphlets, books, posters, films, etc. at wholesale price from NTA and distributes them free or at

cost to those who request them. The only exception to this is Seal Sale supplies—the cost of these items is shared on a 50-50 basis.

Publications — The NCTA NEWS LETTER is published monthly with a mailing list of 1,200. During Seal Sale, **Seal Sale Suggestions** is issued periodically to Seal Sale chairmen throughout the State. Other official publications made available to interested persons include: the monthly BULLETIN of the National Tuberculosis Association, the AMERICAN REVIEW OF TUBERCULOSIS, and abstracts from this organ are published in the JOURNAL OF THE NORTH CAROLINA MEDICAL SOCIETY.

Newspapers, Magazines, and Radio Service—Through the News Release, all newspapers of the State are supplied with news articles on tuberculosis. Feature stories have been written, and the press is kept well abreast of important developments. Mats, editorials, stories, and pictures have been furnished magazines. With the tremendous interest now vested in the radio as a news and publicity medium, special attention has been given to the many stations in the State. Radio scripts, prepared stories, and transcriptions have been made available to all those stations who have shown interest.

Film Service—The State Association has 50 health education films available for free use by responsible parties. Sixteen different topics are covered and 150 requests were filled last year.

Rehabilitation—The North Carolina Tuberculosis Association takes part in conferences and meetings promoting rehabilitation activity. Special grants were made to facilitate programs, and good cooperation was maintained between the association and the official agency. Plans are in the making for further activities in this field.

Legislation — The State Association studies existing state and national laws pertaining to tuberculosis and proper presentation of the facts are made to members of the General Assembly.

Organization and Administration—Members of the State Staff work closely with communities in forming tuberculosis committees and associatons. The local associations are aided in setting up clinics and in case finding surveys. Statistical services are offered the local communities on important problems. This is made possible by careful study of local situations and programs.

There are no boundaries for the dreaded tuberculosis. Race, creed, color or bank account do not halt the spread of the disease that ranks first among those that are communicable. The work of the North Carolina Tuberculosis Association is planed with this in mind. Education of the people about tuberculosis—that is our task in the fight.

DR. KENDALL EMERSON, MANAGING DIRECTOR, NTA, WILL RETIRE JANUARY 1; DR. JAMES E. PERKINS, N. Y. STATE HEALTH DEPARTMENT, NAMED AS SUCCESSOR

DR. Kendall Emerson, managing director of the National Tuberculosis Association since 1928, has resigned to retire to private life. His resignation, reluctantly accepted by the Executive Committee at its meeting in Houston, Texas, October 2, becomes effective January 1, 1948.

The new managing director, appointed by the Executive Committee at the same meeting, will be Dr. James E. Perkins, who has been connected with the Department of Health, State of New York, since 1934, for the past year as deputy Commissioner.

Several years ago Dr. Emerson made known to the Executive Committee his desire to retire but was persuaded to stay in office at least through the war years and the readjustment period

immediately following. When his resignation was again tendered and formally accepted last month, he was asked to remain a consultant. Dr. Emerson assured the Committee his services would always be available to the Association for consultative purposes.

Members of the Executive Committee paid high tribute to Dr. Emerson and his work and concurred with Dr. James R. Reuling, NTA president, who said that "anyone who has had any connection with the Association and with Dr. Emerson must feel a great deal of sadness over his leaving the organization."

In thanking the Committee, Dr. Emerson said that the "varied 20 years" with the Association had been the most interesting experience of his life.

"Delightful Associations"

"I have enjoyed the experience," he said, "largely because of the delightful associations which a job like this brings. Not only did the medical contacts, through the American Trudeau Society, bring satisfaction, but also the association with the people in the National Conference of Tuberculosis Secretaries. I have had an opportunity to find out what fine people are working in the tuberculosis movement throughout the country.

"It has been my greatest pleasure to see the steady and progressive improvement in the quality of each of our association activities and I think that we can bequeath to Dr. Perkins a going concern of which we can be proud. There is a general feeling of cooperation and inter-relation which he will find most gratifying."

Dr. Emerson was appointed managing director of the Association September 17, 1928 and took office October 1 of that year. Under his leadership the services of the Association were broadened to include rehabilitation, public relations, industrial and an extensive adult health education program. At the same time, increasing emphasis was placed on medical research. This culminated in the creation of a separate Division of Medical Research last January, with grants made to 18 investigators for the current fiscal year.

Deeply interested in the international aspects of tuberculosis control, Dr. Emerson has been a member of the Executive Committee of the International Union Against Tuberculosis since 1934 and has attended two meetings of the Committee in Paris since activities of the Union, suspended during the war, were resumed last year.

When Dr. Emerson was awarded the Trudeau Medal at the NTA meeting in San Francisco, California, last June, the citation made special mention of his outstanding contributions to the development of the NTA program to the point where it "occupies a place of honor and leadership" not only in the United States but also in other parts of the world.

Born in Northampton, Massachusetts, in 1875, Dr. Emerson was graduated from Amherst College in 1897 and received his medical degree from Harvard University Medical School in 1901. He began the practice of orthopedic and general surgery in Worcester, Massachusetts, the following year. From 1923 to 1928 he was chief of surgical services in the Worcester Memorial Hospital. During World War I, Dr. Emerson served with the British forces in the Royal Army Medical Corps from 1916 to 1918 and with the Medical Corps of the United States Army from 1918 to 1919. He was deputy commissioner and medical director for Europe for the American Red Cross during 1920-1921.

From 1931 to 1935 Dr. Emerson served as executive secretary of the American Public Health Association. A charter member of the American College of Surgeons, he is now a fellow of the College.

Dr. Emerson early became interested in the tuberculosis control movement and was president of the Massachusetts Tuberculosis League in 1926. He had previously served as chairman of the Worcester County Tuberculosis Association and as a director of the state association.

Upon his retirement, Dr. Emerson and his wife will make their home in Norwalk, Connecticut.

Native of Minnesota

Dr. Perkins is a native of St. Paul, Minnesota, and was graduated from the University of Minnesota in 1927. He received his medical degree from the same university in 1930. He took special courses in Public Health at Johns Hopkins University and received the degree of Doctor of Public Health in 1933, writing his thesis on "A Study of Tuberculosis in the Eastern Health District of Baltimore Maryland." His graduation was followed by a six weeks' fellowship at the Henry Phipps Institute, Philadelphia, Pennsylvania.

In 1934 Dr. Perkins joined the staff of the New York State Department of Health as an epidemiologist, Division of Communicable Disease. The following year he was named a district health officer.

Dr. Perkins was made director of the Division of Communicable Disease in 1938 and last year was appointed deputy commissioner of the State Health Department.

A senior surgeon with the rank of Lieutenant-Colonel, United States Public Health Service Reserve, Dr. Perkins in 1945 was assigned to the Italian Medical Nutrition Mission as co-director with Dr. Ernest L. Stebbins of the Epidemiologic Branch of the mission. The purpose of the mission was to conduct spot-check surveys throughout Italy of the effect of the war upon the Italian civilization population from the standpoints of history of communicable diseases, clinical evidence of general malnutrition and specific deficiencies and also evidence of pulmonary tuberculosis as revealed by chest photofluorographs.

The selection of Dr. Perkins was praised by Dr. Emerson who said that the new managing director had genuine interest and sympathy in the work of the Association and excellent administrative ability.

DOCTORS URGE EARLIER INOCULATION AGAINST WHOOPING COUGH

Babies should be inoculated against whooping cough during the first six months of life, say three members of the Department of Pediatrics of the University of Minnesota Medical School.

Although 67 per cent of all deaths from whooping cough occur during the first year of life, many doctors believe that infants should not be inoculated until after the seventh month. This is because the ability of a newborn infant to form antibodies, the substances manufactured by the body cells to protect themselves against the serum, is supposed to be comparatively low.

Writing in the current **American Journal of Diseases of Children,** published by the American Medical Association, J. M. Adams, M.D., A. C. Kimball, Ph.D., and F. H. Adams, M.D., all of Minneapolis, present a somewhat different conclusion. It was reached after observing the response in a group of babies who were given three weekly whooping cough inoculations within the first month of life.

The authors, who are also members of the Division of Preventable Diseases of the Minnesota Department of Health, comment:

"The fact that the infant at seven months of age is able to respond to immunization better than the newly born infant is rather weak evidence for withholding the immunization past the age of greatest risk. In private practice withholding immunization until seven months may be warranted only if the infant can be protected from exposure by a controlled environment. However, in public health preventive programs and earlier period would seem desirable. Furthermore . . . nonimmunized persons derive protection in a well immunized population.

Deaths From Tuberculosis By County and Race: 1946

R—Respiratory O—Other T—Total

COUNTY Number of counties, 100	Place of Death						Place of Residence					
	R.		O.		T.		R.		O.		T.	
	White	Other	White	Other	White	Other	White	Other	White	Other	White	Other
Alamance	6	3	1	--	7	3	8	2	1	--	9	2
Alexander	--	--	--	--	--	--	--	1	1	--	1	1
Alleghany	--	2	--	--	--	2	--	2	--	--	--	2
Anson	1	4	--	1	1	5	2	8	--	1	2	9
Ashe	1	--	--	--	1	--	2	--	--	--	2	--
Avery	1	--	1	--	2	--	1	--	1	--	2	--
Beaufort	2	7	--	1	2	8	3	11	--	--	3	11
Bertie	1	3	--	1	1	4	3	7	--	1	3	8
Bladen	2	--	--	--	2	--	4	2	--	--	4	2
Brunswick	--	2	--	--	--	2	--	2	--	--	--	2
Buncombe	195	90	5	3	200	93	27	15	1	--	28	15
Burke	13	--	--	--	13	--	4	1	--	--	4	1
Cabarrus	4	1	--	1	4	2	5	4	--	1	5	5
Caldwell	2	1	--	--	2	1	4	2	--	1	4	3
Camden	1	--	--	--	1	--	1	--	--	--	1	--
Carteret	1	--	--	--	1	--	2	2	--	--	2	2
Caswell	1	1	--	--	1	1	1	3	--	--	1	3
Catawba	--	1	--	--	--	1	3	1	--	--	3	1
Chatham	1	1	--	--	1	1	1	1	--	1	1	2
Cherokee	1	--	--	--	1	--	1	1	--	--	1	1
Chowan	--	5	1	--	1	5	--	7	1	--	1	7
Clay	1	--	--	--	1	--	1	--	--	--	1	--
Cleveland	2	--	1	--	3	--	5	7	2	--	7	7
Columbus	3	3	--	--	3	3	4	7	--	--	4	7
Craven	1	6	--	2	1	8	4	17	--	1	4	18
Cumberland	8	16	--	1	8	17	9	18	--	1	9	19
Currituck	--	1	--	--	--	1	--	2	1	--	1	2
Dare	--	--	--	--	--	--	1	--	--	--	1	--
Davidson	2	1	--	1	2	2	3	4	--	1	3	5
Davie	1	--	--	--	1	--	2	1	--	--	2	1
Duplin	3	2	--	1	3	3	3	7	--	1	3	8
Durham	20	18	2	10	22	28	11	24	1	3	12	27
Edgecombe	7	21	--	2	7	23	7	20	--	1	7	21
Forsyth	11	32	3	3	14	35	12	38	3	3	15	41
Franklin	1	2	--	--	1	2	1	6	--	--	1	6
Gaston	5	1	1	1	6	2	8	3	2	--	10	3
Gates	1	--	--	--	1	--	1	2	--	--	1	2
Graham	3	--	--	--	3	--	4	--	--	--	4	--
Granville	1	5	--	3	1	8	3	8	--	3	3	11
Greene	--	--	--	--	--	--	2	6	--	--	2	6
Gullford	11	30	1	1	12	31	12	30	1	1	13	31
Halifax	5	9	3	1	8	10	8	11	3	1	11	12
Harnett	3	1	--	--	3	1	6	5	1	--	7	5
Haywood	2	--	--	--	2	--	5	--	--	--	5	--
Henderson	4	1	1	--	5	1	7	1	1	--	8	1
Hertford	1	6	--	1	1	7	3	10	--	1	3	11
Hoke	36	130	2	1	38	131	3	3	--	--	3	3
Hyde	--	--	--	--	--	--	1	1	--	--	1	1
Iredell	2	--	1	--	3	--	2	5	--	--	2	5
Jackson	2	--	--	--	2	--	3	--	--	--	3	--
Johnston	1	7	--	--	1	7	5	12	--	2	5	14

Deaths From Tuberculosis By County and Race: 1946

R—Respiratory O—Other T—Total

COUNTY Number of counties, 100	Place of Death						Place of Residence					
	R.		O.		T.		R.		O.		T.	
	White	Other	White	Other	White	Other	White	Other	White	Other	White	Other
Jones	--	--	--	--	--	--	--	1	--	--	--	1
Lee	--	3	--	--	--	3	2	4	--	--	2	4
Lenoir	2	4	--	--	2	4	3	9	--	--	3	9
Lincoln	--	1	1	--	1	1	--	1	1	--	1	1
McDowell	1	--	1	--	2	--	3	1	1	--	4	1
Macon	1	--	--	--	1	--	1	--	--	--	1	--
Madison	--	--	--	--	--	--	1	1	--	--	1	1
Martin	2	8	1	--	3	8	3	11	2	1	5	12
Mecklenburg	15	31	3	1	18	32	14	31	2	3	16	34
Mitchell	4	--	--	--	4	--	4	--	--	--	4	--
Montgomery	--	--	--	--	--	--	2	1	--	--	2	1
Moore	--	--	1	--	1	--	2	1	1	--	3	1
Nash	6	8	1	2	7	10	8	13	1	3	9	16
New Hanover	3	6	1	2	4	8	11	18	1	2	12	20
Northampton	2	4	--	1	2	5	2	9	--	2	2	11
Onslow	--	--	--	--	--	--	2	2	--	--	2	2
Orange	--	2	--	1	--	3	3	4	--	2	3	6
Pamlico	--	1	--	--	--	1	1	3	--	1	1	4
Pasquotank	3	3	1	--	4	3	3	7	--	--	3	7
Pender	1	2	--	--	1	2	3	3	--	--	3	3
Perquimans	--	--	--	--	--	--	2	1	--	--	2	1
Person	1	3	--	--	1	3	1	9	--	1	1	10
Pitt	5	17	1	3	6	20	7	27	1	3	8	30
Polk	--	--	--	--	--	--	--	--	--	--	--	--
Randolph	1	1	--	--	1	1	3	1	--	--	3	1
Richmond	2	3	--	--	2	3	6	6	--	--	6	6
Robeson	2	8	--	2	2	10	4	16	--	3	4	19
Rockingham	4	4	1	--	5	4	3	10	1	--	4	10
Rowan	1	2	--	1	1	3	5	4	--	1	5	5
Rutherford	4	1	1	--	5	1	6	2	1	--	7	2
Sampson	2	2	--	--	2	2	4	7	--	--	4	7
Scotland	1	1	--	--	1	1	1	7	1	--	2	7
Stanly	3	--	--	2	3	2	6	1	--	2	6	3
Stokes	4	--	--	--	4	--	5	--	1	--	6	--
Surry	3	--	--	--	3	--	6	2	--	--	6	2
Swain	3	1	--	1	3	2	3	1	--	1	3	2
Transylvania	2	--	--	--	2	--	3	--	--	--	3	--
Tyrrell	--	--	--	--	--	--	--	1	--	--	--	1
Union	--	4	--	1	--	5	2	6	--	1	2	7
Vance	6	10	1	1	7	11	7	11	1	1	8	12
Wake	28	16	1	2	29	18	15	19	1	1	16	20
Warren	--	2	--	--	--	2	--	5	--	--	--	5
Washington	1	--	--	--	1	--	2	--	--	--	2	--
Watauga	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	4	68	--	2	4	70	5	19	--	3	5	22
Wilkes	4	--	--	--	4	--	7	4	--	--	7	4
Wilson	13	42	--	1	13	43	8	20	--	2	8	22
Yadkin	1	--	--	--	1	--	1	1	--	--	1	1
Yancey	2	--	--	--	2	--	3	--	--	--	3	--
Total	507	671	38	58	545	729	391	620	36	57	427	677
Total	1178		96		1274		1011		93		1104	

The Health Bulletin

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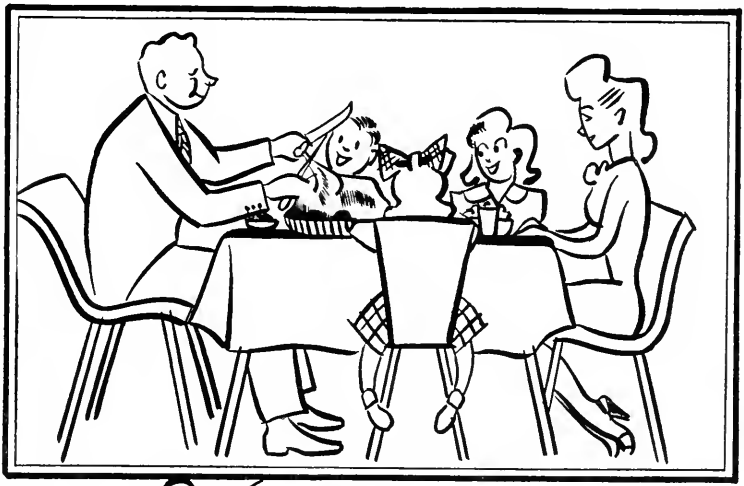

Let's be Thankful

FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which ou may be interested.

Adenoids and Tonsils	German Measles	Sanitary Privies
Appendicitis	Health Education	Scabies
Cancer	Hookworm Disease	Scarlet Fever
Constipation	Infantile Paralysis	Teeth
Chickenpox	Influenza	Tuberculosis
Diabetes	Malaria	Typhoid Fever
Diphtheria	Measles	Venereal Diseases
Don't Spit Placards	Padiculosis	Vitamins
Endemic Typhus	Pellagra	Typhoid Placards
Flies	Residential Sewage	Water Supplies
Fly Placards	Disposal Plants	Whooping Cough

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, North Carolina.

Prenatal Care.	Baby's Daily Schedule.
Prenatal Letters (series of nine monthly letters.)	First Four Months.
	Five and Six Months.
The Expectant Mother.	Seven and Eight Months.
Infant Care.	Nine Months to One Year.
The Prevention of Infantile Diarrhea.	One to Two Years.
Breast Feeding.	Two to Six Years.
Table of Heights and Weights.	Instructions for North Carolina Midwives.

CONTENTS

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CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

State Nutrition Committee

By
VIRGINIA H. BLOUNT, EXECUTIVE SECRETARY
Raleigh, North Carolina

IN January 1940, the State Nutrition Committee was organized to study the nutritional status of several population groups in the State, and nutritional studies were carried out in Wayne and Alamance counties. With the advent of hostilities, the purposes of the Committee were enlarged in order to enable it to aid the war effort; and the work was closely associated thereafter with the State Defense Council. An Administrative Board, a Planning Committee and a Working Committee were formed and a field program to organize committees in each county in the State was put into effect. By the end of 1944, ninety-seven committees were organized in an equal number of counties. An effort was made, with considerable success, to urge people to plant gardens and this activity was of valuable help in meeting the food deficiencies during the war. In 1944, an Executive Secretary was appointed.

When peace came, the war-time plan ceased to be urgent and as a consequence the funds for employing the Executive Secretary were withdrawn. In spite of this difficulty the members of the Administrative Board were convinced that there was a permanent need for the State Nutrition Committee and steps were taken to continue it. Federal funds were secured in 1946 to employ an Executive Secretary and an office was set up for her in September. The present plan contemplates a permanent organization which will work through existing official and non-official groups at state and county levels to promote better nutrition to all people; it is also an agency which can meet emergency situations such as the present food saving program advocated by the President. As now constituted, the State Nutrition Committee has an Administrative Board, a Planning Committee, six working Committees and a Chairman.

The **Administrative Board** is composed of the heads of the Departments of Health, Welfare, Agriculture, Public Instruction, Extension Service, and Farmers' Home Administration. A chairman is elected each year in rotation among the departments. The Administrative Board considers the proposals of the Planning Committee, establishes policies and approves programs. The 1947-48 Chairman is Dr. Ellen Winston, Commissioner of Public Welfare.

The **Planning Committee** is composed of six representatives appointed by the Administrative Board from the staff of the cooperating departments. This committee plans the work which is to

be done and, if approved by the Administrative Board, assists the Executive Secretary in putting it into practice. During 1947 the topic selected for special emphasis was: "Increased Production and Use of Vitamin C Foods in the Diets of North Carolinians." Dietary surveys which had been made among school children of the State indicated that there was need for emphasis on these particular foods throughout the State.

The **Working Committees** are: Publicity, Food Production, Food Conservation, School Lunches, Nutrition Education and Research. The membership of these six committees is made up from the membership of the State Nutrition Committee in accordance with the particular interest of the individual member. Each committee selects its own chairman and works on the problem which has been selected for attention. In 1947 the committees worked on vitamin C foods.

Since the various regions of the state have different problems, Regional meetings have been organized in the Western, Piedmont and Eastern sections. Each region has a Chairman and six Working Committees whose activities supplement those of the State Working Committees. Members of these local groups are usually made up of the same persons who might be members of a local nutrition committee.

A **News Bulletin** is distributed each quarter to all the agencies and lay groups who are interested in the program. Three numbers have already been issued in 1947: No. I, Increased Production and Use of Vitamin C Foods for Young and Old in North Carolina; No. II, Progress Reports of the Working Committees; No. III, Suggested Ways of Teaching Children Nutrition in the Classroom. Four numbers will be issued during the year.

The State Nutrition Committee meets once yearly in December and elects a **Chairman** and other officers. It discusses the work of the year and agrees upon a plan and a procedure for the succeeding year. The present State Chairman is Dr. Bertlyn Bosley, Professor of Nutrition at the Woman's College of the University of North Carolina.

The Nutrition Division

By
W. P. JACOCKS, M.D., DIRECTOR
State Board of Health
Raleigh, North Carolina

GENERAL

IN 1939 the State Board of Health assumed a definite role in nutrition activities as a part of a total public health program. In addition to its own nutrition organization it has supported the nutrition work in the School-Health Coordinating Service and that of the State Nutrition Committee. During these years a bureau of nutrition was built up in the State Health Department and in 1946 this became the Nutrition Division.

All phases of nutrition come within the interest of the Nutrition Division but the size of the staff made it necessary to limit the amount of consultation service to areas and groups requesting special assistance. The type of service given is based on the needs of the various groups and agencies and is usually designed to meet the needs of each community rather than to follow a previously planned program.

The Division works with all groups and agencies interested in promoting a

better understanding of nutrition and its place in the maintenance of health. Working through all available channels, health departments, schools, official and non-official agencies, industries, as well as other organized and unorganized groups it endeavors to meet the needs of members of the community through both direct and indirect service.

STAFF

In the beginning the staff consisted of one medical director. In 1943 a senior nutritionist was added and in 1944 a principal nutritionist. Since 1944 the work has made steady progress, and in July 1947 there was provision in the budget for one director, one principal nutritionist and seven field consultants. A part of this staff is now employed; the rest is being assembled. Nutritionists trained in public health are scarce and are in great demand.

Specifications and Qualifications

In order to establish its position as a permanent division in the State Board of Health, steps were taken in 1945 to set up specifications and qualifications in regard to the staff in accordance with the Merit System Board procedure. Four categories were listed: director, principal nutritionist, senior nutritionist and junior nutritionist. Scholastic and general qualifications and experience were designated. These specifications are in accordance with the recommendations of the joint committee on Professional Education appointed by the American Public Health Association, the American Dietitic Association and the American Home Economics Association. They have been approved by the State Merit System Board. All candidates are required to meet the specifications before being employed.

PROGRAM

The state has been divided into districts of about 15 counties each with one nutrition consultant responsible for each district. She is available for consultation service as requested by school systems, health departments, community organizations, extension and welfare workers and others. Through this arrangement, local authorities and civic agencies may secure specialized assistance in planning nutrition programs.

Dietary Surveys

As mentioned earlier the type of work which the nutritionists carry on has been planned in accordance with the problems presented by the various communities. Beginning in 1944, surveys of the **food** habits of both children and adults were made in several sections of the state. During 1945, **three-day** dietary surveys of over 700 school children were made in Martin, Rutherford, Rowan, Caswell, Cumberland, and Clay counties among white and colored children. **One-day** dietary records of 1702 adults working in cotton and rayon mills in Cumberland and Robeson counties were made.

In the survey of children, the groups which generally give the most accurate information are those 9 to 11 years of age. They are questioned individually by the nutritionists and complete records are obtained of all food eaten over twenty-four hour periods. This interrogation is carried on for three successive days, usually Tuesday, Wednesday and Thursday to avoid weekend variations. A summary of this information gives an indication of the prevailing food habits and is presented to teachers, principals, superintendents, health officers, nurses, parents' teachers associations and community organizations. This fundamental procedure and resulting information is one of the best means of securing the interest and support of persons responsible for the health and welfare of the people and gives valuable data on eating habits and on food inadequacies.

Schools

After the survey of the 9 to 11 year-old group is completed ,the teachers, and principals are provided with the resulting information. The data indicates the food habits of the children

in the community. In some areas children are eating foods they need for good growth; in others many of the essential foods which should be eaten daily are not included in the diets. The food habits of the children may be improved perceptibly when nutrition is included in the regular classroom instruction. Effective teaching, however, requires knowledge of the subject matter and methods of presenting the information. Many teachers have not had an opportunity to become acquainted with either nutrition facts or the newer methods of teaching nutrition. In order, therefore, to provide teachers with the latest information the nutritionist offers an in-service training program to all teachers in the community who are interested in it. This course consists of providing fundamental information concerning foods and their value in maintaining health. In addition the methods of instruction which seem most desirable are discussed and decided upon for each grade level in the elementary schools. This plan of work has appealed to teachers since many have not been accustomed to using experimental animals and experimental procedures in nutrition teaching.

Nurses

Nurses come in close contact with the homes and have many opportunities to offer nutrition information to parents; it is considered important therefore that they should be acquainted with the newer knowledge of nutrition and should be familiar with methods and materials used in teaching. In cooperation with health departments, a series of nurses conferences on nutrition were held at convenient points for the nurses. These conferences which require 12 hours of time for each group included the application of nutrition information to situations in the community with which the nurses must work. By the end of 1946 these conferences had been offered to public health nurses in all counties of the state. Follow-up conferences throughout the state are used to keep the nurses informed of the advances made in nutrition information.

Community Organizations

The nutritionists attempt, through the aid of parent-teacher associations, to enlist the interest and activity of influential people in the community in good nutrition procedures. The response has been encouraging. The community, the teachers, the official and non-official agencies and the health departments are thus brought together in working toward a common end, namely, better nutrition for the entire population of the State. Intensive training programs with interested adults in the community are carried on simultaneously with work with nurses and teachers so that all groups can work together in improving the nutritional status of the community.

Clinics

Nutritionists' services have been used in well-baby clinics, pre-school clinics and maternity and infant clinics whenever possible. Many persons who would not attend community training meetings can be reached through this channel.

Summer Conferences

The staff of the nutrition division and the nutritionists with the school-health coordinating service have had the responsibility for the nutrition teaching at the health conferences for teachers held at the University, the Woman's College, Bennett College and at North Carolina College for Negroes during the six week's summer schools. The Principal Nutritionist taught a university course in nutrition to the health education students in the school of public health during the regular and the summer sessions of the University of North Carolina. Many of the health educators are employed in local health units in the state and consequently they should have a good understanding of nutrition and be familiar with the nutrition program of the State.

COOPERATION

From the beginning, an effort has been made to cooperate with all agen-

cies in the health department and other state departments that are actively engaged in nutrition education work. The Division has enjoyed the opportunity of working with the State Department of Public Instruction, the Extension Division State College and the Welfare Department. Plans are in progress for a close cooperative program for the training of nutritionists at the Woman's College, Greensboro and the School of Public Health at Chapel Hill. In addition to the above agencies the Division work is closely associated with the official and non-official agencies in the field of nutrition and in particular with the staff of the School-Health Coordinating Service.

The school lunch program is a specific activity of the State Department of Public Instruction. The privilege of working with them in some of their workshops for lunchroom managers has helped to make the nutrition education program more effective.

The Extension Division of the State College has requested cooperation with the State Board of Health in all its activities, nutrition being one of the first subjects to be approached. This cooperative association began in June 1946 and is producing results of mutual benefit.

The Graduate School and Home Economics Department at the Woman's College is developing plans for cooperating with the State Board of Health in courses of instruction which include community nutrition and field training. The Professor of Nutrition is the Consultant to the Nutrition Division.

The School of Public Health at Chapel Hill set up a Nutrition Department in October 1946. The Nutrition Division plans to work in close cooperation with the school.

The School-Health Coordinating Service, a joint organization of the State Board of Health and the State Department of Public Instruction, undertook the first organized work in nutrition in the State Board of Health. Since 1944 its staff of nutritionists have carried out programs which were developed in cooperation with the Nutrition Division. These workers have centered their attention mainly in schools and have done excellent work for several years. In 1947 these nutritionists were transfered to the staff of the Nutrition Division in order to extend the nutrition service to all groups in the state.

CONCLUSION

The Nutrition Division is devolping a consultation service available to any group seeking assistance.

In working with other agencies the Nutrition Division seeks to avoid duplication of service and to cooperate with all persons in extending nutrition information.

Ascorbic Acid In Human Nutrition*

By
CORA E. GRAY, PH. D.
Salisbury, North Carolina

DIET surveys made in North Carolina show a conspicuous lack of fresh fruits, tomatoes, citrus fruits and raw vegetables. The lack of these fruits and raw vegetables usually indicates diets which are low in ascorbic acid, or to use its older name, vitamin C.

Scurvy, which all of us have been taught to attribute to a deficiency of ascorbic acid, is not a new disease. It seems to have been one of the diseases

* Abstract of an address delivered at the regional meeting of the State Nutrition Committee in Asheville, September 6, 1947. Dr. Gray was formerly Professor, Home Economics, Catawba College.

which plagued the Crusaders, and at the time when Columbus discovered America, was the most prevalent disease in Europe. Soon after 1700 it was recognized that citrus fruits would prevent and cure scurvy. With our better diets, real scurvy is rare. Some will say at once that if scurvy is practically eliminated there is no need to bother about vitamin C. The fact is that there is a broad borderland between health and actual scurvy and this situation justifies our interest. If the diet has been reasonably good, it takes a long time for scurvy to develop. Two Boston physicians found that on a diet furnishing no vitamin C at all it requires over three months before fatigue developed and six months before scurvy could be diagnosed. The common early symptoms are fatigue and fleeting joint pains. Most people would think of those pains as rheumatism. There are many people who treat what they call rheumatism with a concoction containing lemon juice and insist that it helps. Maybe it does, but if the diet were checked the condition might be identified not as so called rheumatism but as vitamin C deficiency.

The Food and Nutrition Board of the National Research Council in Washington has recommended amounts of vitamin C needed by people according to their age and size. A moderately active man or woman could secure their day's requirement from one good sized orange. During the last months of pregnancy the amount for a woman should be increased by half, and during lactation, doubled. An infant should receive about half the amount needed by an adult woman. Children's needs increase until at 12 years they need as much as an adult man. High school boys need half again as much as an adult man. Whenever there is an increase in body tissue more vitamin C is needed. Fever or a slight cold, increase the need for vitamin C. The doctor's usual recommendation of fruit juice should help. Illness of any sort usually means reduced food intake and hence a lower level of ascorbic acid in the blood. The ordinary diet should be good enough to allow storage in the tissues which will tide-over such situations.

Two recent studies on human beings have been made to determine ascorbic acid levels in the body. In May of this year there was a report of a study made in Corvallis, Oregon, of 91 children between the ages of 11 and 18. Three levels of vitamin C intake were used. The results showed that the amounts recommended by the Food and Nutrition Board maintained these children near the saturation level. The conclusion was that, during adolescence, children's tissues should be kept at or near the saturation level. This means the recommended allowances are adequate but not excessive.

In June a study was reported on the amount of vitamin C in the diet, breast milk, blood and urine of a group of nursing mothers. If the mother's diet was good, the amount of vitamin C in human milk was about four times that in cow's milk and was sufficient to keep her baby's body at near the saturation level. Roughly the amount recommended by the Board was needed to produce milk of this quality. An interesting finding was the great variation in the vitamin C content of foods. Such variations emphasize the need for a liberal standard when the recommendation is given in terms of foods to be included in the diet.

These two recent studies support the use of large amounts of vitamin C as recommended by the Food and Nutrition Board at two periods of great physical stress, adolescence and lactation.

It is important to insure an adequate intake of vitamin C and for normal people the needed amount should be obtained from food. An easy procedure for insuring an adequate amount is to follow the "Basic Seven" rule so familiar to all of us, citrus fruit or tomato every day. The recommended allowance for an adult would be met with one large orange. The day's requirement would likewise be met by two large tomatoes but too many people count

the slice or two in a sandwich or salad as sufficient for the day.

In this part of the country oranges and grapefruit are seldom used at lunch or supper and the usual breakfast includes no fruit. A school lunch sometimes includes an orange. In a study of plate waste made at the Woman's College a year ago, it was found that the college girls did not bother to eat all of the orange or grapefruit when halves were served at breakfast. They did a little better when half of a grapefruit was used for dessert at one Sunday night supper but the waste at the table of this important item of the diet was very high. At the time fruit juices could not be bought and, with some 2,100 girls to feed, cutting the grapefruit to make it easy to eat was an impossible labor problem. Whether this waste represented the college girl's habit of getting up at the last minute and rushing through breakfast to make an early class was not determined. Neither were the girls questioned as to whether they belonged to the group in which no fruit for breakfast is the usual custom. Whether fruit is eaten for breakfast or at some other meal makes little difference but in this country fresh fruit is not often used at other meals with the result that no fruit for breakfast means no fresh fruit during the day.

The next best source of vitamin C is tomatoes. In this section tomatoes do not seem to be well liked except raw or in soup. After frost in the fall when the home supply of fresh tomatoes from the vine is cut off, stored or shipped tomatoes are used. The amount of vitamin C depends on the ripeness and on the length and condition of storage. Shipped tomatoes are likely to be expensive. A wider use of home canned tomatoes in cooking would increase the amount of vitamin C in our winter diets.

Raw cabbage is an excellent source of ascorbic acid but there is considerable loss involved in making it into slaw even under the best conditions. Slaw is generally popular but the method of making it could be improved. Slaw in the school lunch has been severely criticized because it is so often made early in the morning and left standing until served at noon. Recently work done at Cornell has shown that the greatest loss of ascorbic acid in the preparation of slaw occurs in cutting it up and that additional loss, even two hours of standing at room temperature, is small. The more the cabbage is crushed, the greater the loss. The worst possible method of preparation is putting it through the food grinder but since this is also the quickest, it is often used. Shredding with a knife is best. Covering the slaw is often recommended but when one considers the amount of air mixed with the cabbage when it is cut, it is obvious that covering makes only a slight difference. Refrigerator temperature is better than room temperature. Cornell reports three fourths or more of the vitamin C retained at the end of two hours standing even at room temperature. It does seem as though homes and school lunches could manage that time schedule.

Potatoes, both white and sweet, are fair sources of vitamin C. Three medium potatoes furnish almost half of the day's allowance. The usual substitutes of rice or grits carry none and neither do the mature peas and beans. They are good foods of course but they are not useful for vitamin C.

Cooking is always a problem! It varies in detail in different sections of the country, but it is an ever present thorn in the flesh of the nutritionist. Ascorbic acid is destroyed by long continued heat. The shortest possible cooking time is best. In some sections of the north it is the cabbage that suffers most. In North Carolina turnip and other greens must be cooked "within an inch of their lives." Ascorbic acid is easily soluble in water and incidentally so are some other needed factors in a good diet. Everywhere more emphasis needs to be put on a smaller amount of cooking water. A few people use the cooking water in soups or

sauces but the majority do not. The best solution is to have no water left to throw away at the end of the cooking period.

Increasing the amount of ascorbic acid in the diets of this section is a most pressing nutritional need. The people do not eat enough citrus fruits or tomatoes and mistreat some other good sources. When food dislikes and the usual breakfast pattern are added, there is a real problem to be met. Gardens are badly needed. Fruits and vegetables cannot be eaten unless they are available. In addition to making the needed foods available people must be taught to eat what they should. No amount of talking will accomplish that over a long period. Watch someone try a reducing diet. For a day or two all goes well but by the end of the week old habits have come back.

Teaching people to like the foods they should eat is a must. The best approach is through the children. A baby has no food habits. Everyone has had to learn to like each article of diet. The earlier good food habits are stressed the better. No amount of book learning will do it. If you doubt that, ask a group of home economics students what they ate the day before. If they tell the truth, the teacher is likely to be unpleasantly surprised.

The Nutrition Division of the State Board of Health is trying hard to make nutrition teaching in the schools function. Their plan is based on teaching children to like the right foods. It is necessary to begin with the elementary school children. Home Economics in high school is too late and reaches too small a number. Food habits and methods of cooking are like religion. Revivals come along but when the visiting preacher has left, too many sinners backslide. A revival may help but it takes continued effort to keep the sinner converted to righteousness—or to good food habits.

Food Conservation

By
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FOLLOWING the request of the President, that the Governors of the various States cooperate in the matter of putting his food conservation program into effect, Governor Cherry asked the State Nutrition Committee to recommend a workable pattern to be followed in North Carolina. Organization for the task was perfected at a conference held in the Governor's office, after which the Public Food Service sub-committee of the State Nutrition Committee held a meeting in Greensboro, and drew up a plan which was submitted to the Governor for his approval. While it was realized at the time that the plan probably would have to be amended, to meet changing conditions, the conferees sat for more than three hours, endeavoring to work out something that would be accepted, in the main, by the public and, at the same time, would not work too great a hardship on food dispensers.

Representatives of restaurants, schools, hospitals, and various other agencies were present and engaged in a frank exchange of views. The inadvisability of interfering with diet of patients in hospitals was recognized from the outset, as food is a part of the prescribed treatment in numerous cases. Hospital personnel, however, is expected to observe rules governing the general public.

At this point it is well to emphasize

that the greatest problem facing those who operate public eating places is that of waste. The same thing is true concerning the home, especially where the family consists of only two people. The question of just how much food to prepare, without incurring waste, is a major item for the consideration of the housewife. Food waste and spoilage due to rats and mice also must be reckoned with.

The Greensboro meeting was marked by a spirit of seriousness. None of the conferees showed any disposition whatever to be arbitrary or to refuse to accede to any reasonable request necessary for the prosecution of the President's program. However, frankness marked the discussions from start to finish.

After considering all the factors involved, the sub-committee as a whole, composed of 22 members, approved a plan which it asked a group of members to present to the Governor for his approval, before it was announced to the public. This group, which met in Raleigh the next day, was headed by Mr. M. M. Melvin, chairman, and executive vice-president of the North Carolina Restaurant Association.

In his letter transmitting the proposed program to the Governor for his approval, Mr. Melvin said:

"The Public Food Service Committee of the State Nutrition Committee, after making a careful study of the President's Food Conservation Program, has adopted suggested ways and means of food conservation in North Carolina. A copy of the suggested plan is attached for your consideration and approval.

"If, after reviewing the suggested plan, you feel that any adjustments are in order, the Committee is at your service."

The proposed plan was approved by the Governor, who said it appeared to be the best that could be worked out at the present time, in view of all the circumstances, but he let it be understood that changes might be necessary, from time to time, in order to make it more effective.

Following is the official report that was submitted to the Governor, following the Greensboro meeting:

"A meeting of the Public Food Service Committee of the North Carolina Nutrition Committee was held at the Chamber of Commerce in Greensboro on Thursday, October 30, 1947.

"The Committee went on record as favoring the Food Conservation Program as sponsored by the President and his Food Conservation Committee, and also favors implementing the program as outlined.

"The Committee recommends that all public food establishments and institutions comply with the program in so far as is feasible by carrying out the following practices:

"1. Serve no meat on Tuesday and no poultry on Thursday.

"2. Serve bread only on request.

"3. Feature plentiful foods regularly on all menus and use them as substitutes for scarce food items.

"4. Purchase perishable foods only in quantities which can be preserved and utilized with a minimum of loss.

"5. Conduct training programs for all employees. Such employees to be taught how to store, prepare and serve foods with a minimum of waste.

"6. Maintain the highest possible standards of sanitation at all times.

"The Committee realizes that having controlled food service, school lunchrooms, colleges, boarding schools, hospitals, state and private institutions can more nearly conform to the President's program as outlined. Exceptions would necessarily be made in hospitals and institutions for prescribed special diets.

"The Committee realizes that exceptions may be necessary for certain food establishments who are operating with specialized menus such as: hamburgers, frankfurters, barbecue, etc. Full compliance with the program as outlined would be difficult for these establishments.

"The Committee also realizes that the public response to certain phases of the program makes it necessary that

minor modifications be made if full and complete cooperation is to be obtained from food service establishments and the public at large.

"Conflicting statements by top governmental officials has tended to discredit certain phases of the Food Conservation Program, namely, the shortage of eggs. It is the opinion of the Committee that if there does exist a critical shortage of eggs and if the general public is so informed, the response to the conservation of eggs would be much greater. In view of this fact, the Governor of North Carolina is respectfully requested to ascertain whether or not there is a plentiful supply of eggs available at this time. Pending complete information relative to the egg situation and in view of the fact that the diet of the American working public depends on nutritious breakfasts, we believe that it would be feasible to continue to serve eggs for breakfast on the eggless day with the understanding that all industries cooperate throughout the week in the conservation of eggs by substituting on their menus as many items as possible for the usual egg dishes. On the eggless day in no case should egg dishes be featured on the lunch and dinner menus.

"Good food for good health—waste not that all may be fed!"

The Role Of The Nurse In Cancer Control

By
KATHERINE R. NELSON
Instructor in Nursing Education
Teachers College, Columbia University

THE role of the nurse in cancer control, when one analyzes that title, one finds two key words in it. The first is 'role', and the second is 'control'.

I shall discuss the second phase of this title before I develop for you what I think is the role of the nurse. In thinking about control, one is impressed with two aspects of the word. Control may mean preventing something from happening, or control may mean hemming in a danger so that it will not harm the individual concerned or the community at large. In my opinion, there are four aspects of cancer control: prevention, early detection, treatment, and the care of the patient in the advanced or terminal stage. You may be surprised that I include this last stage as an aspect of cancer control, but one of the problems facing the nursing profession is the almost fatalistic attitude of some of the members of our profession and the members of the community at large toward these patients. With the advent of better nursing care to those individuals already advanced to a stage where the life span is shortened, we should find that our happier and more comfortable patients will give us a more favorable viewpoint on this stage of the progress of this disease.

The first aspect of cancer control I would like to develop is prevention. By this I mean really preventing cancer from occuring by careful analysis of a situation to determine the carcinogenic factors in that situation. We, as nurses, are aware that many of the coal tar products are known carcinogens. Chimney sweeps cancer has long afflicted the members of this occupational group

* Read before the general session of the Public Health Nursing Section at the North Carolina State Nurses Association meeting, Wednesday, October 15, 1947.

in England. You will also find that in the June 29, 1946 copy of the Journal of the American Medical Association, Dr. Huper states that, "the first cancer of the bladder in chemical workers was noted in 1932, 15 years after the American Dye industry had reached large proportions. In six years almost 100 cases of this industrial cancer, in relatively young men, had ocurred in one industry."

We also know that some thermal agents cause cancer, and all of us are aware of the danger that excessive radiation can bring to us. Madam Curie and many other heroic pioneers in the field of radium and X-ray research died of cancer induced by excessive radiation. We can carry out our responsibility for prevention of cancer if we learn the etiological factors of cancer and apply them to our local situation. I would appeal to those industrial nurses to keep in mind that some of the known causes of cancer really can be removed before our patient is afflicted.

The second aspect of control is **early detection.** This brings us into the situation wherein the cancer has already occurred. At the Strang Cancer Prevention Clinic in New York City, approximately one and one-half per cent of the presumably well people examined are found to have cancer. These early cancers are frequently unknown to the patient as they occur in the more obscure body sites. New diagnostic methods are being developed to assist us in early diagnosis, but at present we are depending largely on the physical examination. It is deemed advisable for any individual over 35 to have a complete physical examination every six months, or at the least, every year to rule out the possibility of early cancer.

What is the nurse to do about this problem? We can encourage our patients to undergo a complete physical examination once a year with cancer detection in mind. However, while our communities are being educated to the necessity of these periodical check-ups for the maintenance of good health by the efforts of our public health nurses and such voluntary health organizations as the American Cancer Society, it is regrettable that facilities for rendering this public service are still not available in many communities. Doctors and nurses trained in cancer detection are one great need. Examining centers are another. A third drawback is the cost of this physical examination. I was speaking to an individual who has been connected with this work for a number of years, and he told me that a complete examination for the early detection of cancer cost the service agency approximately $15 to $20. We can see that to institute a program of this type in a state with a comparatively large population within a low-income group would bring a grave problem of financing.

The third aspect of control is **treatment.** The extensive scope of this aspect is so large, I hardly know where to begin. Perhaps we should start with the medical plan of care. After making a diagnosis of cancer, the physician will institute some type of treatment. It may be surgery or radiation. Many times the location of the cancer, the extent of the disease, the general condition of the patient, and the availability of clinical facilities for treatment will influence the doctor's decision. A number of years ago radiation was used very extensively. Today we see somewhat less radiation and more surgery. I hesitate to make any specific statements concerning this, because I am aware that this differs for each community and each hospital. However, I believe we may safely say that our present day knowledge of radiation techniques cautions us against excessive use of this type of treatment, and our present advances in surgery allow us to do more and more radical procedures with a good chance of saving our patient and ridding him of his cancer.

When the nurse accepts the responsibility for the nursing care of a particular patient with cancer, she must orient herself to the major problems to be encountered. She must inquire

as to the location of the tumor and the type of treatment the doctor has instituted. She must develop her plan of care around the pre and post-operative surgical problems, or the radiation problems to be encountered. Furthermore, she must consider the nutritional care, the physical care, and the mental or emotional care of this patient. After radical surgery, rehabilitation problems must be faced. Amputation of a limb, loss of the larynx in a total laryngectomy, the establishment of a colostomy or the transplantation of the ureters into the colon or onto the skin must be accepted by the patient and adjusted to. The nurse steps in with the teaching of new cleanliness practices, or the teaching of crutch walking, and helps the patient over a difficult period of readjustment.

The fourth and last aspect of cancer control is the care of the patient in the advanced, or so-called terminal stage, of cancer. Besides facing the nursing care problems encountered in relation to the treatment of the patient, the nurse must now be on the alert for signs of metastases and to guard against injury associated with the metastatic process. By that I mean protection as far as possible from a pathological fracture in bone metastases. A second responsibility of the nurse during this aspect of cancer control is being aware of what is happening to the patient and doing something about it. Three effects of cancer in its advanced stages are hemorrhage, infection, and starvation. It is most important that at all times the nurse be on the alert for evidence of hemorrhage. Sometimes she can be of assistance to the patient with quickly applied pressure, and unfortunately sometimes she cannot. The nurse must also guard as much as possible against the inroads of infection by scrupulous cleansing and irrigations of the affected areas. It is shocking to realize that the patient with cancer may lose his life sooner than necessary because of the infectious process that takes place in the eroded tumor area. We, as nurses, must take very good care of these patients to be sure such an occasion does not arise. It is also true that a large obstructing cancer in the throat or esophogus may cause malnutrition and subsequent loss of life. Careful attention to good nutrition is most important during this trying time for both patient and family. Again, as nurse I would expect you to do everything in your power to maintain the nutritional needs of your patient. This may mean an effort to stimulate his appetite, the straining or mashing of foods for easy swallowing, the administration of high vitamin or yeast mixtures, or the administration of protein, amino acids, minerals and carbohydrates, in intravenous forms. While the last of these methods for maintaining good nutrition is considered within the province of the physician and not of the nurse, we should accept our responsibility and carry it out to the best of our ability.

You may have wondered why I haven't mentioned such generalized problems as the destruction of odors and narcosis. On the whole, we believe that odors are caused by the presence of necrotic tissue and that exceedingly careful attention to frequent irrigations can control odors to a large extent. In relation to narcosis, I am afraid that this is an area in which many factors take part. There is a psychological factor here, and there is also a physical factor. If pain is caused by an eroded area, good cleansing can alleviate this pain to some extent. Even pain caused by pressure can be alleviated to some extent by carefully controlled Wangansteen apparatus, frequent irrigations, and the like. In my opinion, narcosis should be instituted **after** good nursing measures have been tried and have failed. It is encouraging to note that research at present underway in some of our large hospitals is giving us valuable information concerning drugs that will give comfort to the patient and not become habit forming.

I have touched upon the highlights of the program toward cancer control, and, as I said in the beginning, there

are two key words in the title of this paper. The first word was **role.** What is the role of the nurse in this effort to control cancer?

First and foremost, the nurse must act as a nurse. She must be skillful in such technical processes as irrigations and changing a tracheotomy tube. She must be imaginative in planning diversional therapy and attractive meals. She must be sympathetic and understanding with the awkward efforts of the new crutch walker. She must teach the patient the principles of good hygiene applied to the patient with a cancer of the rectum and a new colostomy. In most instances we will expect her to be a nurse. However, a second role is upon her shoulders. It is that of the teacher. To prevent cancer, to find its early symptoms, the nurse must take her place in the educational program of the community. Many times she is the one who does the teaching of early symtoms in the home, and therefore becomes the case-finder for the physician. And last but in my estimation not the least, is the role of the nurse as a student. She must consider herself at all times in a learning situation. Studying better methods of patient care, observing changes in one patient that will enlarge her understanding of the problems of another patient are everyday occurrences. Keeping up with new developments in the field, such as the Popanicolaou smear, a new diagnostic technique, the progress being made with radioactive substances and the nitrogen mustards in the treatment of cancer, are our individual responsibilities. We are all students all the time.

Before I close, I should like to briefly summarize that I see the role of the nurse as nurse, teacher and student in the four aspects of cancer control, namely: prevention, early detection, treatment, and the care of the patient in the advanced stage of the disease. But I would also say that there is a last role that is the most important of all. It is an intrinsic role and not, as the others are, an extrinsic one. I am referring to the development of our personal philosophy. If we feel that this patient who has cancer is "hopeless," then we adopt an apathetic attitude toward our patient and do not render to him the kind of care he deserves. But if we feel than any individual has the right to live out his or her span of life, however shortened, with as much care and comfort as it is in our power to give, then we shall have fulfilled our obligation to our profession and to ourselves as nurses.

National Hearing Week

What Is It?

National Hearing Week is a time set aside by the American Hearing Society, endorsed by the President of the United States, the governors of many states and the mayors of many communities to focus public attention on the hearing problem.

What Is the Hearing Problem?

Between 15,000,000 and 20,000,000 people in the United States are hard of hearing to some extent in one or both ears.

5,000,000 to 8,000,000 have serious hearing defects.

600,000 are using hearing aids . . . approximately 3,000,000 to 4,000,000 need hearing aids.

3,000,000 children have impaired hearing.

40,000 veterans of World War II have lost some or all of their hearing.

In 20 years, the Veterans Administration estimates that 300,000 more veterans will be hard of hearing.

What Can National Hearing Week Accomplish?

An invisible enemy is a dangerous enemy. The object of the Week is to drag the facts of the hearing problem

out into the light of day and expose them to public attention . . . thereby creating a national desire to eliminate this problem.

It can encourage the passage of legislation for the conservation of hearing through periodic hearing examinations in the public schools.

It can bring hope to the hard of hearing who tend to withdraw into themselves and brood on their misfortune. It can show them that help is available . . . that their condition can be alleviated . . . that they are not alone in their suffering.

It can educate the public to the fact that hearing loss is wide-spread, that there is nothing funny about this condition, that it is a handicap which can be overcome with sympathetic help.

What Can the Individual Do?

Support the program of the American Hearing Society which is:

1) Prevent Deafness.
2) Conserve Hearing.
3) Rehabilitate the Hard of Hearing.

It is estimated that every person knows one to five persons who are hard of hearing. Many persons who suffer hearing loss are loath to admit it to anyone, including themselves. Help these people to overcome their resistance to acknowledging their hearing impairment. Tell them of the vast improvements in this field; in medicine, in training to hear through lip reading, and in new improved hearing aids. Get them to do something about their hearing . . . today, not tomorrow.

Conserve the hearing of tomorrow's citizens . . . Watch children carefully for signs of hearing loss after illnesses involving nasal passages, ears or throat. Inattention, falling grades in school, a tendency to shun company are indications of this condition.

ENLIST FOR BETTER HEARING
SUPPORT THE AMERICAN HEARING SOCIETY.

With three million children in the United States having a hearing loss, and millions of adults already hard of hearing, it is TIME TO CONSERVE HEARING, according to Dr. C. Stewart Nash, President of the American Hearing Society, Washington, D. C. The national organization is joined by its 120 local chapters throughout the country in the observance of NATIONAL HEARING WEEK, November 9-15.

"Authorities estimate that one out of every ten person in America has a hearing loss, ranging from a slight loss to almost total deafness. The social and mental effects of this hearing loss can do much to warp the personality of a growing child, and in addition may prove an effective bar to the child's making a success of later life," said Dr. Nash. He went on to point out the necessity for parents and teachers to watch children carefully for any signs of hearing loss, especially after illnesses involving the nasal passages, ears or throat.

"Prompt attention by a competent otologist is necessary where such a hearing loss is suspected," Dr. Nash declared. "Inattention, falling grades in school, a tendency to shun the company of other persons are often indications of a beginning hearing loss. The majority of people with serious hearing defects need never have reached that stage if the trouble had been checked in its incipient state."

Dr. Nash recommended a vigorous hearing conservation program to be put in effect in the school system of the nation. This includes periodic hearing tests, medical examinations followed by prompt medical attention if any impairment is discovered, and adequate education and rehabilitation for those with a handicapping hearing loss.

Many firearms accidents occur because guns are accidentally discharged when the hunter slips and falls, climbs over a fence, crawls through the underbrush, or puts a gun in the car. Handle every gun as if it were loaded.

The Health Bulletin

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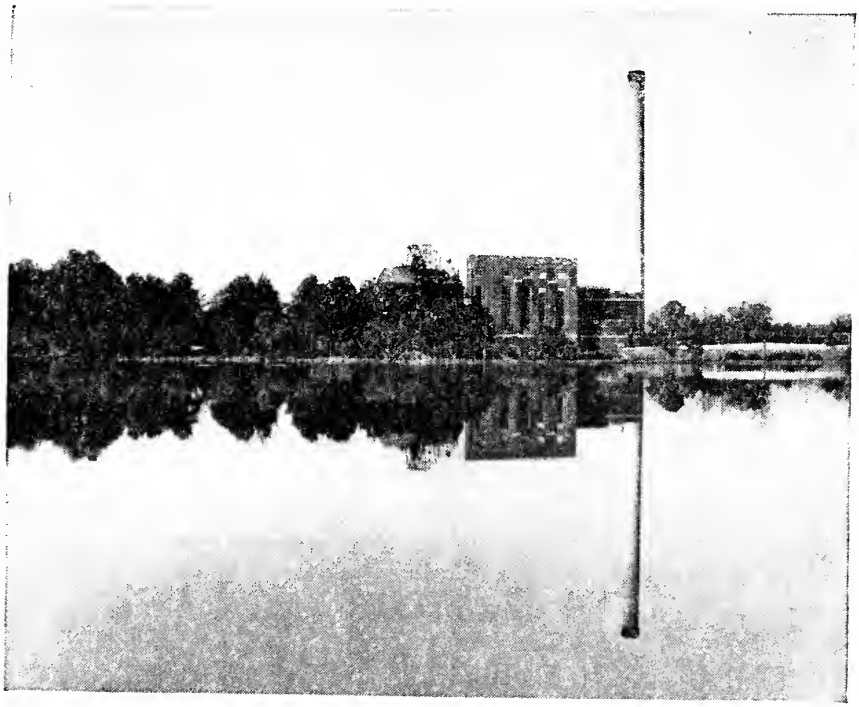

Photo by Flye

RESERVOIR AND WATER PLANT

Rocky Mount, N. C.

CONTENTS

THE Health Bulletin
PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH
Vol. 62 NOVEMBER, 1947 No. 11
CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

The President's Message

North Carolina Public Health Association
Thirty-Sixth Annual Session
Charlotte, November 3, 4 and 5, 1947

By M. B. Bethel, M. D.

NEEDED this discourse any other title I should call it "Take pleasure in your work; don't take yourself too seriously."

We are banded together in an enterprise with nobility of purpose unchallenged, the prevention of suffering and of premature death. We are allied with many. We have formidable opponents in disease, poverty, ignorance and lethargy.

There is equilibrium always between these opposing forces and neither will become completely dominant in any foreseeable future. It is inconceivable that man's puny devices could bring either Utopian perfection or complete anihilation of the race. Somewhere in between we must continue to strive.

Can we not take a great deal of pleasure in being part of a crusade to banish illness, illiteracy and the illusory? It matters not what is our station. The individual fills but a niche in a massive movement and the greatest leader accounts for but little more than the humblest follower, for without both there could be no consequential effort.

I hope none of our group works merely to hold a job and to earn a living. I hope dedication to the task before us is a constant stimulus to greater achievement.

We need not dwell always at ethereal heights and dream only of Elysian Fields. There are pleasures more sustaining—the consciousness of a job well done, the spirit of working in harmony and the satisfaction of being everlastingly kind and courteous.

It is not hard to see ways in which we may derive an abundance of pleasure from our daily stints. Now to consider the delicate balance between proper appreciation of purpose, and tipping the scales too far in that direction.

Few of us have posts that others cannot fill and we do well occasionally to meditate in this vein. No one admires a stuffed shirt.

Take no pride in admitting to a mistake, but be not too vain to be gracious. We make more friends with an apology than with callous disregard for another's feelings.

Our job is so big and the success of our venture is so important that we should make an enemy only with just cause. Many a Health Officer's edict has been successfully ignored or defied because it was an edict.

Many a nurse, sanitarian, educator or clerk has failed to carry the day when a little more tolerance and understanding would have led to triumph.

Humiliation is not to be courted, but humility is a virtue indeed to be coveted.

The admonition not to take yourself too seriously likewise implies that, in some respects at least, you may not take yourself seriously enough. As a group, we are not vocal enough in matters pertaining to compensation of our workers. Modesty and timidity, instead of boldness and vigor, too often characterize our quest for appropriations in the cause of health.

There are, of course, limits beyond which a state or community cannot go in financing its health program but nowhere in this state have we even approached the point of diminishing returns.

It is tragic that Public Health in North Carolina is so seriously hampered for lack of funds. The long list of vacant stations and the enumeration of those forced to leave our ranks because of low pay makes indeed a melancholy tale.

The plight of the state's own employees borders on the ridiculous. Though they serve in a nerve center, in consultative capacities, they are, in many instances, more poorly paid than are local employees in less responsible positions. It is the height of folly to handicap such a vital organization as the State Board of Health with such inadequate salaries. It is a sad state of affairs when several local health officers receive salaries in excess of those paid to the most responsible State Health Officials.

North Carolina is no pauper and she does herself only harm to treat her public servants shamefully. Better to pay and be well served than to be niggardly and suffer the just rewards of parsimony.

I advocate, and urge you to promote reasonable compensation all along the line, not for boisterous wasters giving nothing in return, but for earnest workmen worthy of their hire. Not more pay and less work—our hours may be too short already—but rather more pay and more work until we are armed and staffed to do the job; stimulation of the capable and elimination of the laggard.

At today's living costs, we should have ten and twelve thousand dollar local health officers, the same or better for the top state positions. Seventy-five hundred is modest enough for a top flight engineer and five thousand is but the due of a competent and experienced nursing supervisor. With three thousand dollars to pay for good sanitarians and public health nurses, more for better ones, we would have no gaping holes in our ranks. When all other public health people are so paid in comparison we shall see an end to our personnel and recruitment problems and we can gather steam for the job ahead.

Fantastic, you think! Not at all. We reasonably demand allegience of those within our fold, but a man's back is not clothed with devotion nor his stomach filled by great ambition. The carpenter of Gallilee required sustenance to do his mighty work!

And, it is largely our fault that our ranks are so decimated because we have not ardently, forcefuly and endlessly stated our case.

It is never trite to observe that "In union there is strength." We have, in this association one of the most potent and least used of all our resources. I should like to see it take a more prominent place in the scheme of things, strengthen the weak, hear the wronged, promote the good and uphold the right.

The idea of organizing into regional groups within the state also has merit if not carried to extremes. Too much regional concentration will weaken the parent organization; too many such meetings will dissipate our energies in useless sound.

Solve the riddle of adequate compensation and we shall have gone far in the solution of all other problems. To me that means periodic increases of stipulated amounts, as well as stated minimums and maximums. Add to this a retirement plan for all positions in all

departments and we shall have done well by public health in the old North State.

These objectives are obtainable if we work together but distant as the sun and stars if left to an aggressive few.

Perhaps we should re-phrase our original admonition—"Take pleasure in your work; in certain proper respects, take yourself more seriously."

Heart Disease

BY WALTER HOWARD WILSON, M. D.
Raleigh, North Carolina

HEART disease leads all other causes of death in the United States. The toll of heart disease deaths has become greater, largely because of the ever-increasing span of life which allows more and more people to achieve old age and in turn makes them vulnerable to degenerative diseases of the cardio-vascular system. For the United States as a whole in 1945 heart disease led as a cause of death with 30.3 per cent, while cancer was second with 12.7 per cent, apoplexy was third with 9.5 per cent, and nephritis was fourth with 6.3 per cent. If heart disease, apoplexy, and nephritis are considered together as cardiovascular-renal disease, we find a total of 46.1 per cent.

In spite of the fact that heart disease leads all other causes responsible for deaths, every physician knows that many more patients with symptoms suggesting heart disease with normal hearts seek medical advice than those with actual cardiac disease. In recent years heart disease has received a great deal of publicity which on the one hand has proven of value to the public, but on the other hand has resulted in the production of much anxiety concerning diseases of the heart. There is a great responsibility involved in telling a patient that he has heart disease and unless the physician is definitely certain that significant abnormality exists, he should lean toward the conservative side. In many instances, little harm is done by failing to recognize minor abnormalities, whereas untold suffering and anxiety may be caused by an unwarranted diagnosis of cardiac disease.

The incidence of heart disease has actually increased in recent years, but this increase has not applied to all the people. There is a decrease in deaths from infectious diseases of youth, thus lengthening the average span of life. This has allowed many more older people in the population, and such persons are more apt to develop heart disease. In youth and middle age there is actually less heart trouble than formerly.

The cardiovascular system may be thought of as a series of branching graduated elastic tubes through which the blood is forced under pressure by the heart acting as a pump. The normal heart throws out blood in regular strokes or beats. The sudden influx of blood into great vessels with each contraction of the heart expands them sharply to create the pulse which can be felt, heard, and often seen over the various arteries. The blood flows from the arterial tree through a multitude of arterioles of small diameter and they are normally in a state of tonic contraction. The resistance thus created maintains arterial blood pressure at the normal levels. As the blood passes the barrier of the arterioles, its pressure drops sharply and continues to diminish through the capillaries and veins until the heart is reached again. The progressive fall in blood pressure causes the blood to continue to flow forward.

There are many checks and balances which normally keep the pressure re-

lationships of the cardiovascular system in perfect equilibrium. The autonomic nervous system, the part over which we have no voluntary control, plays an important part in the regulation of this state of equilibrium.

In the presence of heart disease the heart may not be capable of responding with an increased blood output. Under such circumstances the chambers of the heart are not completely emptied during the contractions, the accumulation of blood in the great veins continues, and the viscera become congested. This increase in pressure and the slowing of flow extend back through the smaller veins to the capillaries where the pressure is increased at the same time that the rate of flow is diminished. The increase in capillary pressure disturbs the balance of intracapillary and extracapillary fluids and tends to force fluid out of the capillaries into the tissue spaces. When such an accumulation of fluid occurs, edema is the result.

The heart is a powerful hollow muscle divided by a wall into two main divisions, called right and left. Each of these divisions is further subdivided into two chambers which work together as pairs and units. The blood stream flows from the body into the right side of the heart through veins. From there it is pumped to the lungs to get rid of carbon dioxide and to have its supply of oxygen replenished. The blood is then returned to the left side of the heart to be pumped through the arteries to supply the body with fresh oxygenated blood.

The heart is normally about as big as a fist, but it is mostly muscle and its biggest job is to pump into the arteries the blood which has been returned to it by the veins. There are miles of blood vessels and it is necessary for the normal heart to pump the blood at an average rate of about seventy-two strokes per minute. The normal pumping action of the healthy heart is a continuous series of regular contractions and relaxations: about two and one-half billion times if the pumping is continuous for seventy years.

Resting the body allows the heart to rest. During periods of exertion, the heart may beat twice as rapidly as usual and pump more blood. The faster the heart beats, the harder it works and the less time it has for rest.

Heart disease is a general term which covers a variety of different afflictions. Some of the most important types are involved with infections, especially rheumatic fever and syphilis. Other types are associated with congenital defects, high blood pressure, diseased coronary arteries, or with overactivity or underactivity of the thyroid gland.

The most widely accepted theory of the causation of congenital anomalies of the heart is arrest or imperfect development of the heart before birth. The question of primary cause remains unanswered. Possible causes include environmental factors which affect the growing embryo.

The young person's heart is apt to be damaged by rheumatic fever which nearly always begins in childhood. The specific cause of rheumatic fever is not definitely known. It is commonly found that rheumatic heart disease is present in children who have had recurrent tonsillitis, St. Vitus dance (chorea), or arthritis. Some individuals are more susceptible to the development of rheumatic heart disease than others. Contributing factors are poor diet, inadequate protection from cold and damp, and crowded living conditions. One attack of rheumatic fever does not necessarily confer immunity, and might make the individual more susceptible to further attacks. Repeated attacks are more likely to damage the heart. Rheumatic involvement might leave scars in the heart which hinder proper working of one or more of the valves of the heart. Proper regard to work, rest and play in the case of persons whose hearts have not been too severely scarred, may permit productive and normal or nearly normal lives. The child must be kept in bed during the active stage of rheumatic fever in or-

der to give the heart the rest it requires to make as good a recovery as possible. Absence of fever, and the presence of a normal white blood count, and normal sedimentation rate of the red blood cells help in the decision of when the patient is able to begin to resume part or all of his normal activity.

Intercurrent infections should be prevented in so far as possible and should be treated promptly after recognition, should they occur.

Syphilis continues to be a common cause of infectious disease of the heart. Fortunately, syphilis is more easily recognized than formerly and many more cases are treated more promptly. If syphilis is treated early and adequately, the heart may escape damage.

Bacterial endocarditis is a serious infection which damages the lining of the heart and is a part of a blood stream infection in which foci of infection became embedded upon the heart valves. Small particles of infected material are frequently thrown off as emboli and are spread to various patrs of the body and new foci of infection are set up. Penicillin has done much to control this disorder.

High blood pressure is one of the commonest causes of heart disease in middle-aged persons. The exact cause is not known. Many cases of it are associated with kidney disease, or a disease or functional disturbance of the nervous system or the glands of internal secretion, most of the cases are of undetermined etiology. It is commonest in persons who are overweight.

The blood pressure varies with exertion, strain, stress, and emotional tension, because of contraction of the arterioles.

Low blood pressure or hypotension does not cause heart disease. It may be found in cases of hypothyroidism, Addison's Disease of the adrenals, and may be found in persons with anemia, weakness, malnutrition, underweight or prolonged convalescence. Frequently a person with a low-normal blood pressure is apt to live longer than the person with the high-normal blood pressure.

Persistently high blood pressure frequently is associated with enlargement of the heart muscle, which may be the first step in the development of hypertensive heart disease. The progress of hypertensive heart disease to the point of heart failure can often be delayed for many years by leading a life of moderation in work, play, eating, smoking, and emotional reactions.

Heart disease may result from thickening of arteries which supply blood to the heart muscle. It may produce Angina Pectoris which may be manifested as recurrent chest pain with or without radiation to the neck, and arms and relieved by rest. If a coronary artery or a branch becomes plugged or occluded, the area of heart muscle supplied with blood by this vessel degenerates and the process is known as myocardial infarction, which is secondary to Coronary Occlusion. Such an accident as Coronary Occlusion is a grave medical emergency and requires immediate and prolonged care and support, followed by prolonged convalescent care. Many people are able to live comfortably with coronary heart disease if they are careful not to place too great a strain on their hearts. They must make every effort to strike a balance between too many and too few restrictions. It is important to strive for equanimity. Occasionally, some individuals with a comparatively small amount of heart damage and disability make themselves worse through sheer nervousness.

It is important to realize that the heart may be innocent of causing many of the feelings of discomfort which are frequently blamed on it. Pressure from below, as from gas in the abdomen, may give rise to pain in the chest with which the heart has nothing whatsoever to do. On the other hand, any discomfort in the chest which is directly related to exertion or excitement should be thoroughly investigated by the physician by history, physical examination and electrocardiography.

The heart itself may at times act queerly without having anything organically wrong with it. Common, but annoying experiences of this kind are skipped beats, palpitation, and heart-consciousness. Dyspnea on exertion should always be investigated as a symptom of possible weakened heart muscle, or congestion in the lungs which occurs when the left side of the heart is unable to pump adequately all the blood it receives from the right side by way of the lungs. Swelling of the feet and ankles is another early sign of possible heart weakness.

Heart murmurs are blowing sounds which have replaced the usual heart sounds which may or may not indicate that something is wrong with the heart. A great many murmurs have little or no importance. Others may indicate that damage has been done to the valves or heart muscle as a result of previous disease.

Generally considered, the object of the way of living recommended for persons with heart trouble is the removal of all excessive burdens, especially those imposed my fatigue, obesity, infections, and emotional upsets. Rest and activity should be carefully watched and correlated. Rushing and hurrying should be avoided. One should not walk against a cold wind. Excessive climbing should be avoided. Moderation should be employed when possible. Speed of work should be decreased, fatigue should be minimized, and adequate rest must be insured. Overeating should be strictly denounced as the commonest cause of obesity. Obesity results in an extra strain upon the heart. Excessive smoking of tobacco may cause disagreeable disturbances of the heart beat and may aggravate the symptoms in certain types of heart disease. It is felt that smoking tobacco makes the arterioles tighten up, just as they do under emotional stress, and construction of the arterioles raises the blood pressure. A person with heart disease must take care to avoid the added burden and possible risk of further damage imposed by infections, such as colds, sore throats, pneumonia, and infections of the sinuses and teeth.

Cultivation of a serene, optimistic outlook on life helps a great deal in relieving an impaired heart of unnecessary strain. One must give up the excessively fast pace of life, and must learn to go ahead with less speed, haste, worry and fear, and he must accept the situation, and adjust to it cheerfully.

The patient with heart disease must learn to accept limitation of physical existence, even to the point of muscular weakness, in order to retard the progress of the disease as much as possible. Death is often preventable, but activity may be so restricted as to make it impossible to earn a living wage. One of the chief problems for ambulatory patients with chronic heart disease is the maintenance of a low sodium intake, and especially the restriction of intake of table salt.

Advances have been made in the treatment of certain types of congenital heart disease by means of surgical operations for such conditions as patent ductus arteriosus, coarctation of the aorta, and the tetralogy of Fallot.

Recently, interest has been shown in the sympathectomy operation for high blood pressure. In this regard it should be pointed out that candidates for sympathectomy should be carefully selected, because the percentage of beneficial results is about the same as after the use of other methods employed with equal enthusiasm and diligence.

Anticoagulants are now being recommended for patients with Coronary Occlusion. They are best used in the first day or two of the attack. Dicumarol taken orally is at present the most suitable anticoagulant if used under careful laboratory control. Thrombosis and embolism may be controlled by the proper use of anticoagulants. In some medical centers ligation of veins as a prophylatic measure is suggested, but such a procedure is somewhat radical.

Intravenous morphine to control the pain in Coronary Occlusion has helped

to prevent or lessen the shock which accompanies myocardial infarction. The treatment of Angina Pectoris with methods which help to promote the return of blood to the heart has improved the rational management of this condition.

Purified products (glycosides) of digitalis are rapidly replacing the use of older forms of digitalis in heart disease. Salicylates have been employed in large doses recently in the treatment of rheumatic fever, but it is not certain whether or not this practice lessens the degree of cardiac damage. Sulfonamide drugs may be useful only in preventing recurrences of rheumatic fever.

Certain types of heart disease are reversible, such as the damage produced by overactive and underactive thyroid glands, the former being treated with iodine, thiouracil, and surgical removal of part or all of the thyroid gland, and the latter being treated by the administration of thyroid extract. Chronic constrictive pericarditis may be relieved by surgical resection. Certain aneurysms can be attacked successfully by competent surgery.

The heart is man's most vital organ and if it becomes overtaxed or strain its function is impaired and the entire well-being of the whole body is affected. Reserve strength is built up by a proper balance between a nutritious diet and recreation, work and rest. In the presence of illness or undue physical or emotional strain, the cardiac reserve may be used up quickly and unless proper rest is given, complications may arise. The practice of self-medication should be avoided, and one should have periodical check-up medical examinations, rather than trying to rely on gossip and hearsay concerning the existence of and the treatment of heart disease. Optimism on the part of the physician and the patient is a significant adjunct in the treatment of many chronic heart disorders.

Summary

In relatively brief form, some aspects of the broad subject of heart disease have been discussed. An analysis of many controversial theoretical considerations in the diagnosis and treatment of heart disease has been avoided. Many types of heart disease are reversible, either spontaneously or by recognized types of treatment. The optimistic patient who leads a calm, well-ordered life and is regularly subjected to competent medical care is more apt to get along best.

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Food Saving Sound Domestic Economy

BY WILLIAM H. RICHARDSON
State Board of Health
Raleigh, North Carolina

MOST everyone is familiar with what is known as the President's Food Conservation program, the primary object of which is to aid the starving peoples of Europe. The State Nutrition Committee, at the request of Governor Cherry, has undertaken to promote this program in North Caro-

lina; and the committee has elected to carry out its assignment through the use of educational, rather than coercive methods. Adherence to the President's program is voluntary and rests solely on a wide humanitarian appeal.

The State Nutrition Committee, in its report to the Governor, did not emphasize any hard and fast rules; but, rather, it placed major emphasis on saving food, not only as a means of helping to feed starving Europe, but as an aid to our own domestic economy. Many individual families and some public eating places are following the President's request to the letter, by abstaining from serving meat on Tuesdays and eggs on Thursdays. In other words, they have given more than mere lip service to the food conservation program, the **underlying principle** of which ought to be made a part of our domestic economy, not necessarily in the spirit of self-denial, for having produced food in great quantities we, as Americans, have the right to enjoy the fruits of our labors—but we do not have the moral, even if we have the legal, right, to waste food in any amount. If there were no hungry mouths in Europe to feed, there would be enough right around us to make the waste of food a crime against humanity.

Under the program, as it is sponsored by the President and his advisers and adhered to by those who have a basic interest in humanity, we can both **have** and share. Even in its literal interpretation, the program deals with our own people, here at home, far more liberally than does the present high cost of living. Inflation is an inside enemy that can take and probably is, in many instances, taking food from the mouths of men, women, and children in our own midst. Many of these are too proud to admit they are suffering, and would rather go hungry than to eat at the expense of others. That is part of the American spirit, whether it be practical or not.

But, let us get back to the main theme of this discussion, that is, waste, as it affects not only our ability to help others, but also as it affects our own dinner tables.

Positive Action Emphasized

Any program made up of a series of negations is unworkable. Any system that seeks to tear down, with no thought of building something better, is faulty and will not stand the test. A foreigner whose religious beliefs were entirely unknown to the questioner, was, on one occasion, asked to name the greatest religious teacher of all ages. And he promptly replied, "Jesus Christ." Then, he was asked the question, "Are you a Christian?" "No; I am not," he replied. Whereupon, the questioner wanted to know: "If you do not hold the Christian faith, why do you say that Jesus was the greatest teacher that ever lived?" "Because," he replied, "Jesus gave the world a positive program to follow, rather than one which emphasized negative orders." This man, though perhaps a monotheist, was neither Christian nor Jew.

And so, when we map out a plan of procedure, such as has been presented by the President, in his appeal to the American people, in behalf of the starving millions of Europe, we should place major emphasis on **positive action**, that is SAVE FOOD. It is not enough merely to ask people to **refrain** from doing something. The **positive** must outweigh the **negative!**

Much Bread Wasted

According to Mrs. Eunice O. Stott, nutrition consultant, with the State Board of Health, economists agree that more bread is wasted than any other food. It is estimated, she says, that at least one slice of bread out of every loaf baked each day goes to waste. Sometimes too much bread is kept on hand at one time, and it often becomes dry and molded before it can be consumed.

What is the remedy for this **waste of bread?** Mrs. Stott presents the following for your consideration:

"Dry bread can be used in many ways. It can be toasted in cubes or

sticks, or used for French, or milk toast. It can be served with creamed dishes; or it can be made into crumbs and used to thicken soups, gravies and desserts, or to stretch out meat or cheese dishes. One of the most familiar ways to use bread crumbs is for stuffings or dressings. A third way is to use dry bread crumbs as a coating or topping, to add crispness to fried, baked, or escalloped dishes."

Substitute for Bread

We have heard a good deal about saving, by refraining from eating it on certain designated days. This gives rise to the question: "What are good substitutes for meat? You say abstain from eating so much meat, to make conservation more effective. Then, what **shall** we eat? Give us something positive."

In this connection, Miss York Kiker, dairying and marketing specialist with the North Carolina State Department of Agriculture, makes a contribution, in the form of one answer to the above questions.

"When meat supplies are expensive, and also while we are being asked to cooperate with the food conservation program, by using less meat, wise housewives turn to other foods that may alternate with meat for main dishes," Miss Kiker points out. "Cottage cheese is an excellent choice, for it is recognized by nutrition specialists as a food whose value is equal to that of meat. Cottage cheese is quick and easy to use, in a great variety of dishes, from the first course to salad and dessert. Because of its bland flavor, it combines well with many different foods and seasonings. Too often, our cooks have seen cottage cheese only as something with which to top off lettuce and fruit salads.

"In using cottage cheese for main dishes, skillful seasoning with onions, herbs like parsley and sage, chopped pimento, green pepper and celery, or tomato sauce, is suggested. For added flavor and food value, use chopped nuts, peanut butter, and a little oil or fat. The cheese itself needs no cooking."

The Egg and You

Now, let us consider the **egg and you.** We are being asked to use eggs sparingly, throughout the week. This has given rise to speculations concerning the possibility of having an adequate breakfast without eggs, which occupy such a vital and popular place on the American breakfast menu, along with ham and bacon. We may give up the eggs as necessity demands, but we will always miss them—candor compels this admission.

Can it be done, that is, can we have an adequate breakfast without eggs? Mrs. Stott, State Board of Health nutrition consultant, quoted earlier, says yes. "It is true," she points out, "that eggs are a valuable food, and that they contain a very fine quality of building material, which children need for growth, and which adults use for body repair and maintenance, but there are other foods which contain this high quality of building material, also. Use milk and cheese," she advises, "to take the place of eggs, and you will increase, rather decrease, the food value of your breakfast. Try cooking oatmeal in milk."

As a matter of fact, we can observe the President's requests literally and then have a surplus of one egg a week. Nutritionists tell us that five eggs a week are all that is necessary for a full egg diet. Many people eat two a day. If these would cut down to one egg six days a week, as the conservation program recommends, they would have a surplus of one egg. If they should eat only the necessary number, they would have one to spare.

Begin your breakfast with a glass of fruit juice — tomato, grapefruit and orange — are the best kinds for health. Then, serve cheese toast with your oatmeal, cooked in milk; "and," Miss Stott predicts, "You will agree that eggs could not be more delicious—and, as to food value, you can stop worrying; you have lost nothing, and you have added a great deal of nourishment."

You will note that this article has

not dealt with prohibitions. The food conservation program is volutary, so far as outside coercion is concerned. The command to observe it must spring from within, with all the facts before you. The fact that there is a need, and the fact that you can cooperate in making this program a success, without injury to the health of you or any member of your household.

Notes and Comment

BY ACTING EDITOR

RABIES Dr. R. A. Kelser, chairman, Special Committee on Rabies, American Veterinary Medical Association, invited representatives of the organizations indicated to meet at the University of Pennsylvania, Philadelphia, April 9, 1947 to discuss a rabies control program:

American Public Health Association
American Medical Association
U. S. Public Health Service
Bureau of Animal Industry, U. S. Department of Agriculture
U. S. Livestock Sanitary Association
American Animal Hospital Association
American Veterinary Medical Association

The Conference unanimously agreed on the following principles and considerations in connection with such rabies control program as might be undertaken on a national basis: (a) Rabies in the United States is of sufficient importance to make it desirable that the federal government participate in means for its control through cooperation with the several states, contributing funds and personnel. (b) Rabies in man is generally a disease reportable to local and state health authorities. Rabies in lower animals should be specifically a reportable disease to be reported to public health or other responsible state health authority. It should be reported by states, with place of occurrence specified. Through a central federal agency, the consolidated information should be assembled, analyzed and distributed to all states, agencies and individuals having responsibility in a rabies control program.

(c) In a program for the control of rabies in the United States prime consideration must be given to (1) adequate diagnostic facilities, (2) the control of animals capable of transmitting the disease and (3) mass immunization of susceptible animals, particularly dogs.

Diagnostic Facilities.—To be considered adequate, facilities for the diagnosis of rabies should include not only provision for the microscopic examination of brain specimens from suspected animals but also means for the inoculation of laboratory test animals. The number and location of laboratories performing services connected with the diagnosis of rabies should be adequate to provide prompt service within reasonable distances. Further, facilities should be provided for maintenance of suspected cases of rabies in lower animals under proper veterinary observation.

Control of Animals (Dogs, Cats and Wild Life) Capable of Transmitting Rabies.—Control measures for animals capable of transmitting rabies should include:

(a) Licensing of all dogs.

(b) Proper disposition of ownerless, unwanted and stray domestic animal pets.

(c) As soon as rabies appears in a community, strict control of all dogs should be enforced for whatever period of time may be considered necessary. Dogs should not be permitted to run at large but should be properly confined on their owner's premises and only be permitted away from same when under proper restraint by a responsible individual.

(d) Dogs which have bitten persons or other animals and dogs which are suspected of having rabies should be confined in a suitable, authorized place under veterinary supervision for a period of not less than fourteen days.

(e) Dogs known to have been exposed to rabies should be destroyed or kept confined for a period of not less than six months.

(f) Dogs under 6 months of age, being particularly susceptible and less satisfactorily immunized than older animals, should be confined until the area is certified as officially free of rabies.

(g) Adequate provisions and facilities for enforcing all regulations and requirements connected with the control program should be provided.

(h) The control program should be continued for a period of at least ninety days subsequent to the last reported case of the disease.

(i) Should rabies be found to exist in wild life prompt arrangements should be made for active cooperation with the U. S. Fish and Wild Life Service and the analogous agency of the state involved. In this connection, when rabies has become established in wild species a program for reducing the number of individuals of the affected species should be instituted and continued until the disease disappears. Routine brain examinations should be made to determine the incidence of the disease in the wild species and to determine when it has abated.

Mass Immunization. — The vaccination of dogs, combined with other control measures as indicated herein, provides the most satisfactorily method for the prompt control of rabies. Vaccinated dogs, when properly tagged, may be allowed at large thirty days after vaccination. Vaccination should consist of at least one injection of an immunizing dose of an accepted canine rabies vaccine. Evidence indicates that a single 5cc. subcutaneous injection of an approved vaccine is effective in a mass vaccination program. However, the injection or three doses of vaccine in 5cc. amounts a week apart provides greater immunization and should be advised when practical. For permanently reducing the number of susceptible dogs, it should be suggested that owners have their dogs immunized annually.

In any rabies control program it is deemed essential that a local (county or municipal) Rabies Advisory Committee be organized to facilitate operational functions and cooperative effort. Further, the Conference agreed that an educational program should be launched by appropriate authorization, representing federal, state and local agencies, to explain the necessity of control measures, including the efficacy of the rabies vaccines now approved by the U. S. Bureau of Animal Industry and the National Institute of Health. The object of such an educational campaign is to acquaint the public and owners of dogs and other pet animals with pertinent facts concerning rabies and the reasons and importance of the measures taken for the control and eradication of the malady and the value of specific immunization against rabies. The advisability and desirability of utilizing vaccination not only for the control of the disease during an outbreak but also in building up and maintaining a relatively highly immune dog population through the annual vaccination of dogs with rabies vaccine should be pointed out.

In view of the essential existing responsibility of the Bureau of Animal Industry of the U. S. Department of Agriculture, the U. S. Public Health Service and the U. S. Fish and Wild Life Service, this Conference recommended that the function of coordinating a campaign for the control of rabies on a national scale be vested jointly in these three agencies. A plan for accomplishing this on a cooperative basis can undoubtedly be worked out through consultation of representatives of the agencies involved.

Steven Donnas Flippin, age 3 months, weight 16 pounds, son of Mr. and Mrs. Alexander Flippin, Jr., Mt. Airy, N. C.

Gordon Frank Wilson, age 19 months, son of the late Doctor Frank Wilson and Mrs. Wilson, Raleigh, N. C.

Club Pays Honor To Miss Gaynor*

CITY HEALTH NURSE FETED AT MEETING

In recognition of the work being done by Miss Annie Gaynor, city health nurse, in connection with the club's Hard-of-Hearing Project, the Rocky Mount Exchange Club designated its regular weekly meeting last night at the New Ricks hotel as "Annie Gaynor Night."

J. D. Weaver, past president of the club, after reviewing the accomplishments of the Hard-of-Hearing Project, presented Miss Gaynor with a traveling bag as a token of appreciation for the faithful work she is doing in the Rocky Mount Schools to determine which of the children have hearing deficiencies.

Miss Gaynor in response told of several specific instances where children had been found to be hard of hearing and corrective measures have been taken. Miss Gaynor reported that all of the students in the ninth and twelfth grades have been given hearing tests during the present school term and that she is now testing the children in the first, third and sixth grades of the grammar schools. The club then made Miss Gaynor an honorary member and the Exchange Club pen was presented to her by Lyman B. Hoggard, who was club president at the time the Hard-of-Hearing project was launched.

Hal Wilhalf and Curt Daughtridge

reported to the club that one of the club Micro Book Film Projectors had been placed in the home of Jack Vick, who resides in the Oak Level section of Nash County. Mr. Vick, who's son has been an invalid for several years, reports that the boy is securing a great deal of pleasure through the use of the machine.

Jack Lindsay who is connected with radio station WCEC was a guest of the club.

During the meeting, which was presided over by club President M. T. Whitley tribute was paid to the late Chief of Police J. R. Thomas.

*From Rocky Mount Evening Telegram.

Need Public's Help in Cancer Education, Service, Research

First of series of articles designed to aid in early diagnosis of cancer calls it "Everybody's Problem."

"The cancer problem from the public's point of view should be everybody's problem," writes John J. Morton, M.D., a member of the Department of Surgery of the University of Rochester School of Medicine and Dentistry, New York, in the December 13 issue of The Journal of the American Medical Association.

Dr. Morton's article is the first of a series on the various aspects of cancer, each written by a different specialist, which will appear in The Journal.

The articles of which Dr. Morton's is the first are designed to aid the general practitioner in the early diagnosis of cancer and to guide him in the selection of the correct technic of treatment. But, Dr. Morton observes, the public has work to do as well as the physician and the scientist.

"The public must become cancer conscious," he says. "It must approach this problem in a rational manner. It must recognize that there is a job to do. Few Americans have ever quit in such circumstances. The physicians of America have launched a crusade to learn more about cancer. They need the help of the public for education, for service and for research. They need the intelligent cooperation of everybody.

"The people of the country must see to it that their physicians examine them for cancer. They must make it possible for the physicians to organize cancer detection or well person centers in their communities where examinations can be made. They must provide adequate equipment. They must help in the care of those who have the disease. They must see to the comfort of those who cannot be cured. They must make it possible for young scientists to train themselves to find out the causes of cancer. They must see to it that fanatics do not hinder these scientists by making animal experimentation difficult or impossible. The public should be so anxious to solve the riddle of cancer that every possible lead should be followed no matter what the cost.

"The life of man is short. The acquisition of knowledge takes a long time. The technics of treating cancer even as imperfectly as it is now treated require years of hard study—averaging 10 for a general physician and 15 for a specialist, at a salary scale that would not interest an ordinary laborer. The finest young scientists of America have always worked for a pittance and many have left the field of cancer research because they could not afford to stay in it. America—the public—should be ashamed that its scientists do not rate as high as its entertainers.

"The public has responded magnificently to the appeal for cancer funds. The money has been well spent. The country is large and much more is

needed. Progress will be slow because the problem of cancer is not an easy one.

"The public must accordingly be tolerant and must not demand results. Results will be forthcoming in time and with adequate public support and cooperation it may be sooner than appears possible at present. . . . The patient is the one who should be most concerned that new advances be made to help him and others afflicted by cancer. It is for him to insist that money be available for new investigations because only in this way can new frontiers be opened and a hopeful future unfurled."

NO HEALTH DANGER IN AIR TRAVEL FOR INFANTS UNDER ONE YEAR OF AGE

There is no danger in air travel for an infant under one year of age, states a medical consultant in answer to a query in **The Journal of the American Medical Association.**

Although there have been rumors that air travel is not well tolerated by infants, the consultant points out that a United Airlines survey conducted during 1941 and 1942 revealed that a healthy baby reacts better to flight conditions than most adults.

"An infant's ears adjust to altitude more easily than an adult's," the consultant explains, "probably because their eustachian tubes are short and straight.

"Airsickness is a rarity. There have been reports of vomiting, but this apparently is due to regurgitation of food when the infant is fed aloft. The gas expansion which takes place at altitude results in a regurgitation unless great care is taken to prevent the infant from swallowing air while being fed."

A Lifetime Can Be Spent
In Crossing a Street

THE SCHOOL NURSE

When the nurse comes to see us
We think she is swell.
She talks about food to eat
To help to keep us well.

She examines us all over
Eyes, teeth, scalp and throat,
If she catches us unkept
She really gets our goat.

She sticks us with a needle
She does it with a smile.
She sees dirt behind our ears
When away from us a mile.

She carries in her little kit
Just what! We cannot tell,
But if she finds a sore spot
She has something to make it well.

We should be very kind to her
She works so hard we know,
Doing all these things for us
Because she loves us so.

Miss Johnsie L. McKinley
Principal Centerview School
Kannapolis, N. C.

Accidents are the greatest killer of young people between the ages of 2 and 28 years. They are almost three times as deadly as tuberculosis in the 15 to 19 age group alone, the National Safety Council says, and nearly six times as deadly as heart disease.

o

Give the Kids a Brake

o

No Sense and Nonsense Cause Most Accidents.

o

When You Walk, Take Steps for Safety.

o

Beware the Flames that Flare from Flaws in Flues.

o

It's always care weather where children get together, the National Safety Council says. Near playgrounds and on all residential streets, don't take big chances with little children.

The Health Bulletin

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Veterans Hospital at Fayetteville. (Photo, VA.)

CONTENTS

THE Health Bulletin
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Vol. 62 DECEMBER, 1948 No. 12

CARL V. REYNOLDS, M.D., State Health Officer JOHN H. HAMILTON, M.D., Acting Editor

Diabetes Mellitus

By
CHARLES W. STYRON, M. D.
Raleigh, North Carolina

Diabetes Mellitus is a disease which is characterized by a high blood sugar and by the presence of sugar in the urine. Before any patient is told that diabetes is present these two conditions should be satisfied. The disease is caused by a failure of certain cells (the cells of the inlets of Langerhans) in the pancreas to produce adequate quantities of insulin. It is possible, and often is found to be the case, that patients have diabetes without having experienced symptoms of any sort whatsoever. On the other hand if the disease has been present long enough or if it is severe enough certain symptoms become evident. Perhaps the most common early symptoms which develop are fatigue, thirst, excessive urination, especially that of the necessity of arising at night to void, and increased appetite. Associated with these symptoms a patient may experience muscle cramps, numbness and tingling of the feet, and later some weight loss. One of the earliest symptoms of the disease in the female is itching of the genitalia. In fact this symptom is one of the most common complaints causing the patient to consult a physician. Unfortunately the symptons of the disease are usually vague and gradual in onset. For this reason patients are slow to consult a physician. Oftentimes they simply feel rundown, and consider that a little rest or tonic is all that is needed to overcome their difficulty. It would be better for the patient if early symptoms were severe enough to send him to the doctor right away, because best results in treatment are obtained in those patients who have had the disease for a short time and in whom the disease exists in a mild form.

Recently the residents of a small New England town were studied by the U. S. Public Health Service. The incidence of diabetes was found to be 1.7%. In other words 17 people out of every 1000 were diabetic. This incidence throws an entirely new light on the disease. It means that there are in the neighborhood of 2,000,000 diabetics in the U. S., three times as many as there were previously thought to be. Suppose the disease were scarlet fever or diphtheria. Immediately all agencies would concern themselves with eradicating it. Yet diabetes is not a disease of short duration. It is a disease which lasts for the life of the patient and which accounts for more time lost than any communicable disease. It is worthwhile for the population in general, therefore, to know something of this prevalent disease, how to prevent it, and what to do about it once it has developed.

What about prevention of diabetes? We know that the disease is hereditary although at times it may be difficult to point to the forebear who had the disease. We know furthermore that in order for the disease to be passed on it must be present on both sides of the family. One diabetic, therefore, ought never to marry another diabetic, nor should a diabetic marry into a known diabetic family. Another feature in the causation of diabetes is obesity. Ninety-nine out of one hundred people who develop diabetes are overweight at the time that the disease starts. We know that in the majority of people who develope diabetes that the disease would never have developed had normal weight been maintained. It is particularly important for any individual who has diabetics amongst his relatives to maintain a slim waistline. Otherwise he is surely asking for trouble.

Next in importance to prevention of diabetes is early recognition of its presence. How can this be done? Certainly not by waiting until symptoms of the disease have developed. How then? One way, of course, to detect early presence of the disease would be by periodic examinations of the urine for sugar, perhaps, twice yearly. The slightest trace of sugar in the urine ought never to be disregarded for it is in these cases that the disease is found at its outset.

Once diabetes has developed certain steps must be taken in its management. First of all,, the diabetic must realize that his future health will depend to a very large degree upon what he is willing to do in the treatment of his disease. There are certain things that are required if he is to obtain the best results immediately and in the future. He must be willing to make certain fundamental changes in diet, to take insulin if his case is such that insulin is required, to learn about the disease which will always be with him, to have periodic examinations and advice including diabetic education from his physician, and to develope certain habits of health which will be discussed in detail below.

In general the public feels that the diabetic is sentenced to a lifelong starvation and deprivation diet. The fact is that the present day diabetic diet is a full and wholesome diet which is calculated scientifically to give adequate nourishment. The truth of the matter is that our entire populace would benefit by staying on a diet as wholesome as that prescribed for the diabetic. The diet is adequate in calories, vitamins, and minerals. It is pretty much in fact what most of us have been taught that we should eat. Such a diet is given here. The portions allowed, of course, would vary according to the age, sex, size, and activity of the patient.

Breakfast	Grams	**Portion**
Eggs		1
		or
Bacon	15	2 strips
Oatmeal		
Cooked	120	½ cup
Butter	5	1 teasp.
Cream 20%	60	¼ cup
Milk	120	½ cup
Orange	100	small
Bread	30	1 slice

Dinner & Supper	**Grams**	**Portion**
Meat	60	2 oz.
5% Veg.	150	1 cup
10% Veg.	75	½ cup
Butter	10	2 teasp.
Cream 20%	30	2 tablesp.
Orange	150	Medium
Bread	30	1 slice

Bedtime
2 uneedas and ½ cup milk—120 grams

Each item of diet listed above is interchangeable with some other item which may be at the time more available. For example, we include with meat both fish and fowl. Cheese and eggs may be used as a substitute for meat. But the matter of substitution is a technical one which requires special education for the diabetic. Certainly the above diet which would closely approximate any modern dia-

betic diet now in use does not ask too much if it means good health. In fact it is the all-American diet, or better still it is what the all-American diet should be.

Insulin is everything that is good for the diabetic. It should be defended on all occasions and never allowed to be spoken of in discreditable terms without a word in its favor. Insulin has changed the entire life of the diabetic. Where there was living death before insulin there is now life. Remember that prior to the discovery of insulin virtually all diabetic children died within two years and for the diabetic population as a whole the average expectancy with very best treatment was about six years, and the average age at death about 47 years. Nowadays there is no real reason why a diabetic should die of the disease itself although negligence leads to complications which certainly can reduce the life span. Insulin should be used readily. If there is a question as to whether the diabetic should take insulin or not, then insulin is probably indicated. But insulin demands that it be used wisely. Patients who do not respect what insulin can do and patients who do not have the knowledge of its action should not blame it for their ignorance. Furthermore, it is not enough simply to take insulin. Diet should be followed as carefully when insulin is used as when it is not used. The principal danger in insulin treatment is the insulin reaction due to the presence of reduced sugar in the blood. The reaction consists of such symptoms as nervousness, sweating, tremor, headache, blurred vision, double vision, fast pulse, hunger, rarely nausea, and if untreated over a long period of time, possible unconsciousness and convulsions. But to the intelligent patient these latter signs almost never occur and when they do, will respond promptly to administration of sugar by mouth or into the vein. Patients often resist the suggestion that they take insulin, but if they need it the first injection will render such a definite beneficial effect that they are quickly convienced of its good properties.

There are certain health habits which the diabetic should develope. He should do his usual amount of work. Work is good for him, particularly work in which there is exercise. There are few jobs which are denied him. It is probably not wise for the diabetic to do hazardous work involving working at heights, for example, if he takes insulin. Certainly not at any rate without the advice of his physician. He should have a certain amount of exercise and walking is probably the best form of exercise because it can be done every day in fairly regular fashion. Setting up exercises are also of value. The diabetic certainly should have eight hours of sleep out of every twenty-four.

Diabetics are somewhat more prone to have infections than non-diabetics. For that reason special care should be taken of the mouth and teeth. Necessary instruction are as follows:

Care of the Mouth and Teeth

1. Use a small tooth brush with tufts well seperated. Have two brushes and alternate each time you brush your teeth, replacing brush if bristles are soft.
2. Equal parts of baking soda and table salt make a satisfactory tooth powder.
3. Brush your teeth at least twice daily, morning and night, spending two minutes each time. Be sure that you do this properly. Ask the dental hygienist to show you if you are not sure.
4. After brushing teeth, massage gums, working the fingers toward the teeth in rotary motion. This is particularly important for diabetics.
5. Have your teeth cleaned by a dentist or dental hygienist every 3 months and the teeth examined for cavities. Keep all cavities filled.

The feet of the diabetic are vulnerable. It is far easier to prevent trouble than to correct it and for that reason

the instructions given below in written form are stressed:

Treatment of Feet

1. Wash feet daily with soap and lukewarm water. Dry thoroughly, especially between toes, using pressure rather than vigorous rubbing.
2. When thoroughly dry, rub with lanolin as often as necessary to keep skin soft and free from scales and dryness, but never render the feet tender. If the feet become too soft, rub once a day with alcohol.
3. If nails are brittle and dry, soften by soaking in warm water one-half hour each night and apply lanolin generously under and about nails and bandage loosely. Clean nails with orange-wood sticks. Cut the nails only in a good light and after a bath, when the feet are very clean. Cut the nails straight across to avoid injury to the toes and do not cut the nails too short. If you go to a chiropodist, tell him you have diabetes.
4. All patients with overlapping toes or toes that are close together should separate them by lamb's wool. Patients with large joints or cramped-up toes should wear shoes without box toes and made of vici kid leather.
5. All patients over 60 should have daily rest periods and remove their shoes. Every Sunday morning ask someone to examine your feet.
6. Do not wear bed-room slippers when you ought to wear shoes. Slippers do not give proper support. Do not step on floor with bare feet.
7. Wear shoes of soft leather which fit and are not tight (neither narrow nor short). Wear new shoes ½ hour only on the first day, increasing 1 hour daily.
8. Use bed socks instead of hot water bottles, bag, bricks or electric heaters.
9. After 50 years one hears less well, sees less well, and the sense of feeling is diminished. Remember this and be cautious about the feet.

Treatment of Corn and Callosities

1. Wear shoes which fit and cause no pressure.
2. Soak foot in warm, not hot, soapy water. Rub off with gauze or file off dead skin in or about callus or corn. Do not tear it off. Do not cut corns or callosities. Do not try to remove corns or callouses with patent or other medicines.
3. Prevent calluses under ball of foot,
   (a) by exercises such as curling and stretching toes 20 times a day,
   (b) by finishing each step on the toes and not on the ball of the foot.

Aids in Treatment of Imperfect Circulation—Cold Feet

1. Exercises. Bend the foot down and up as far as it will go 6 times.
2. Massage with lanolin or cocoa butter.
3. Do not wear circular garters or sit with knees crossed.
4. If you have had or been threatened with gangrene, keep off your feet 5 or more minutes each hour of the day and if an amputation, 15 or more minutes.

Treatment of Abrasions of the Skin

1. Proper first-aid treatment is of the utmost importance even in apparently minor injuries. Consult your physician immediately.
2. Avoid strong irritating antiseptics, such as coal tar products and iodine.
3. At once after injury some surgeons recommend applications of sterile gauze saturated with medical alcohol or hexylrescorcinol (S.T. 37). Keep wet for not more than 30 minutes by adding more of the anti-septic solution. Sterile gauze in sealed packets may be purchased at drug stores.
4. Elevate and, as much as possible until recovery, avoid using the foot.
5. Consult your doctor for pain, redness, swelling, or any inflammation.

When diabetics are sick with colds or influenza they should call their doctor,

go to bed, take a cup of coffee, tea, or broth every hour and have the diet adjusted to the special need at the time. A friend or a nurse should be in attendance and the bowels should be moved by an enema.

There are other things in which the diabetic needs education. He should be acquainted with the urine test for sugar and what it means and he should test his urine once daily. He should understand how to measure his insulin and how to change the dosage according to the degree of diabetic control. He should understand thoroughly the meaning of acid poisoning or diabetic coma and thus be in a position to prevent its onset.

It would be most gratifying to be able to state that all diabetics under treatment are model patients. However, it is encouraging nevertheless, that most of them lead a happy, fruitful, healthful life. Some, in fact, have even improved their general health by having developed diabetes for they have developed habits of living which make for health.

Finally the diabetic is one of a large family. He has almost 2,000,000 sympathizers among which are school children, farmers, authors, doctors, winners of the Nobel prize plus his family physician. The diabetic never learns too much about his disease. And he never learns so much that he can dispense with his doctor. He who tries this almost invariably consults his doctor to get him out of trouble. It is far more economical to prevent a complication than to correct it. Periodic check-ups do this. **A well diabetic is an encouraging example to every member of the diabetic family. He should make it his aim to remain so.**

Vital Statistics In 1947

By
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If the monthly average maintained through October continues until the close of the year, there will have been approximately 113,732 live births in North Carolina in 1947. Should this total be reached, it would reflect a gain of about 13,000 over the last year, which established an all-time record, up to that time.

Through October 1947, there have been 94,786 live births reported to the Vital Statistics Division of the North Carolina State Board of Health, or an average of 9,478 for each of the ten months through that period. Conceding that there might have been a lowering of the average for November and December, figures for which have not yet been compiled for publication, it is safe to say that considerably more than 100,000 babies will be born in this State during 1947, and that a new all-time high record was established.

During the period under consideration, there were 25,114 deaths reported to the North Carolina State Board of Health, as compared with 94,786 births heretofore mentioned. This means there were 69,672 **more** births than deaths. Of the total number of deaths, however, 13,423, or more than one-half, were attributed to just four causes, namely, heart diseases, 6,166; intracranial vascular lesions, 2,787; nephritis, 2,200; and cancer, 2,270. These are among the so-called degenerative diseases usually associated with middle and late life; and, with the exception of nephritis,

deaths from each of these diseases exceeded those reported for the same period of the previous year.

The so-called degenerative diseases of middle and late life continue to present preplexing problem, as no sure means of preventing them has yet been discovered. They can be combatted only through early diagnosis of conditions which may bring them about.

Accidents during the period under consideration claimed 1,899 victims. Add these to the above total of 13,423, and we have a considerably larger total than one-half of all deaths reported—15,322, to be exact.

While the degenerative diseases may be prevented, most accidents **can.** Of the 1,899 accidental deaths reported for the first ten months of this year, 707 were associated with automobiles, and 1,192 resulted from accidents due to other causes, including many which occurred in the homes of our people. While traffic deaths are appalling, yet we should not overlook or remain inadvertent to these resulting from other causes—accidents equally as preventable as those resulting from the lawless and careless handling of motor driven vehicles.

Here is a heartening note in the vital statistics picture in North Carolina, from January through October, 1947. Deaths from pulmonary tuberculosis totaled 828, as compared with 916 the previous year. We are now bringing tuberculosis out into the open, for what is hoped will be the final struggle. Early diagnosis, and early treatment are resulting in hundreds of cures. First, the tuberculosis victim must be **found**, before he or she can be diagnosed **or** treated—but we **are finding the** cases as never before, through mass surveys, during which hundreds of thousands of chest pictures already have been taken. The objective is to secure an x-ray of every North Carolinian. A big order? To be sure, but progress is being made, to a gratifying degree.

Now, let us have a look at deaths from what are now known to be preventable diseases. During the first ten months of 1947, there were only 26 deaths from diphtheria in North Carolina, as compared with 44 during the corresponding period if the previous year. However, there was a flare-up in the incidence of diphtheria toward the end of the year. that likely will bring the death total higher for the year in its entirely.

There were only four deaths from typhoid and paratyphoid fever, as compared with 8 for the corresponding months of 1946. Typhoid fever is, very definitely, and without any argument, a preventable disease—one that has been fought **back,** and **back,** with remarkable success, through immunization and sanitation—that is, preventive medicine.

Whooping cough is now preventable, and the total number of deaths from that juvenile disease through October, 1947, was only 45, as compared with 52 the preceding year.

Most of us recall that there was a considerable amount of poliomyelitis reported in certain sections of North Carolina during the late summer and fall of 1947. But, at that, deaths through October numbered only eleven, throughout the State, as compared with thirteen for the corresponding months of 1946.

Let us now consider a disease which is not classed as a juvenile disease—and which formerly took a large number of lives, but which has proven to be curable, by means of proper nutrition and a certain known specific. Reference here is to pellagra, as the result of which there were only 47 deaths through October, 1947, compared with 60 through October of the previous year.

In 1930, when the depression was showing adverse results in many ways, the death rate from pellagra in North Carolina was 32 per 100,000 inhabitants. By 1944, despite the war, the rate had dropped to 1.7 deaths from pellagra in North Carolina, per 100,000 population. While much criticism has been leveled at rationing, and prior to that, at reform methods used to raise the American standard of living for the "under-

dog"—and is no argument in favor of or against anybody or any system—we do know that, since 1937, the death rate from pellagra has dropped to an almost negligible figure. It is not a question of **how much** we eat, in the prevention or cure of diseases resulting from poor nutrition, but of **how well** we eat. As far back as thirty years ago, the late Doctor Albert Anderson, then superintendent of the State Hospital for the Insane at Raleigh, claimed to be successfully treating and curing pellagra, by feeding the affected patients plain, old-fashioned field peas. Since then, many other foods have been added to the list designed to prevent and cure pellagra, and with apparent success. The point now is: How shall we **educate** the people to eat foods that will **prevent and cure** this disease? Well, they **do seem** to be eating more of these foods —from the result reported. But it has taken hard work.

One of the greatest factors in spreading nutritional information has been and is the North Carolina State Nutrition Committee, which Governor Cherry recently asked to promote the President's food conservation program in this State. The committee made its recommendations, which were readily accepted by Governor Cherry, as a plausible pattern, only after much consideration. Not so much emphasis was placed on "shalts" and shalt-nots," as on food **conservation, PLUS** the right kind of eating. In other words, the committee seized—gladly—the opportunity to perform this, a service which has enabled it to preach the gospel of nutrition, as well as conservation and the elimination of waste. For the things the President has asked the people to refrain from eating on certain designated days, the State Nutrition Committee has given the public information about substitutes of equal, and sometimes superior, nutritional value.

And so, there are other ways to fight certain diseases than by the use of drugs, or even immunizing agents. The fight on pellagra has demonstrated this, to a marked degree. The victory is not won—but it is well on the way, and it will be hastened if the intelligent people of this State will pay still more attention to their diet, by eating not necessarily the most expensive foods, but those with greatest nutritional value, regardless of their cost. The lowly collard, the field pea—and scores of other things.

We have devoted a good deal of time to pellagra; haven't we? Did you know —before—just what had been accomplished in the battle against this contributor to graves and insane asylums?

Even with ten months' figures—only —available at this time, we have a pretty clear picture of vital statistics, that is, life and death in North Carolina, during 1947. What are we going to do about the problems of 1948? We hear that question rhetorically asked so often that we often grow tired of it; and we hear so many answers that we cannot keep an account of them. There are more "authorities" abroad in the land today than ever before; more folks with fancy ideas and fantastic answers. None of us knows what the future is going to bring—not even the most competent "Authority." But we **do know** that unless we are basically healthy, we will not be as well fitted to cope with ANY of its problems which lie ahead, in 1948 or 1958. And we will not be really healthy, unless we avail ourselves of the means which science and commonsense have placed at our disposal. To be really healthy, we must be physically, mentally, and spiritually, or morally, healthy. We must be physically healthy to combat those ailments which bring us to our graves; we must be mentally and spiritually healthy to combat those things which bring us crime, sorrow, and disrepute and sap our national life.

Motorist Wise — Use Their Eyes

o

Darkness Doubles Traffic Trouble.

Eating Out

By
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We have heard a great deal recently about the President's program to save food in the home and in public eating places, in order that we may continue to furnish food to the hungry of Europe; but this article is about another phase of food handling. Public eating places in North Carolina are regulated by Public Health laws; and, incidentally, we have the reputation of having, perhaps, the best kept public eating places in the United States, despite the man who wrote an article telling why he hated Southern cooking. There are exceptions, to be sure; but, in the main, operators of hotels, restaurants, cafeterias and other places where food is served to the public have given fine cooperation.

The November issue of the American Restaurant, of Chicago, of which James V. Malone is the managing editor, carried a splendid article, titled "Half a Million to Make Eating Out a Real Pleasure," and written by K. G. Vester and A. B. Ferguson, of the Rocky Mount Health Department. This article deals with the restaurant situation in Rocky Mount. It furnishes such a conspicuous example of what cooperation between Public Health Officials and restaurant operators can accomplish, that we are giving it to you, with the telegraphed permission of Mr. Malone, on file at the State Board of Health:

"To Rocky Mount, N. C., the blessing of better public food-handling has become a postwar reality. In this southern city where good food is traditional the term 'eating out' is today synonymous with tasty foods served amid clean and attractive surroundings. Rocky Mount restaurant operators realize that patrons who are impressed by restaurant cleanliness will return time after time to surroundings which please their optics as well as their palates. Upon this axiom the Rocky Mount food-handling industry based its program of renovation and expansion for better compliance with public food handling laws and to satisfy more exacting patron demands.

"Victory for better food handling ideals has been achieved in this community of 25,000 people. Through health department and restaurant industry cooperation many obstacles have been surmounted. Neither expense nor effort has been spared by the Rocky Mount restaurant industry to modernize buildings, equipment and methods. The campaign of progress is still gaining momentum.

"Of the sixty licensed food handling establishments in Rocky Mount all can point to recent progressive accomplishments. In the lowly hotdog stand as well as the modernistic dining establishments safe food-handling is a daily objective. The glamour of color scheme, modernistic design or exclusive atmosphere never surpasses the factor of safe food handling. Whether it be drug store lunch counter, school cafeteria, in-plant feeding unit or one of the larger downtown restaurants, all are equipped to render this vital service.

"Plans for Rocky Mount's 'better food handling' service began taking shape during the 'hard-to-get' days of 1944. Numerous blue prints for restaurant expansion and renovation were complete long before essential items of equipment and building materials were available. Preparation systems, building design and equipment layout were checked and rechecked by management, builders, equipment engineers and the city health department. When prob-

lems arose, and there were many, cooperative consultation ironed them out. Strict adherence to the restaurant regulations, visual planning for eye appeal and cooperative planning for patron service and safety were embodied in these efforts. Gradually the struggling infant began to grow.

"The results of these efforts, a three year record of achievement for Rocky Mount's foodhandling industry, portrays civic pride of progressive management. For instance, during this period ten new restaurants have been built and completely equipped, ten have been completely remodeled, twenty-four have been partially remodeled and re-equipped and at this writing seven are being completely renovated and re-equipped. This program has involved an expenditure in excess of $500,000.00, all of which has been entirely voluntary. The city health department has supervised, encouraged and used its facilities to promote this city-wide revolution in public food handling. However, the restaurant operators themselves have taken the initiative in promoting their segment of local industry to a higher level.

"What does this better public foodhandling program mean in terms of community benefits? First, it means that better equipment and working conditions promote foodhandling personnel efficiency. Second, better equipment and safer foodhandling assures stronger barriers to safeguard the community health. Third, a better foodhandling service creates a bigger and better drawing card for bigger and better community business.

"Business leaders agree that a progressive restaurant industry is essential for continued growth, business stability and prosperity of Rocky Mount. Strategically located in the heart of a rich agricultural section, this city has become the shopping and transportation center of eastern North Carolina. Daily rail service by forty passenger and forty five through freight trains brings New York or Miami within overnight distance. In addition to air transportation Highways 64 and 301 cross here.

"To the visitor Rocky Mount's tobacco industry, the third largest in the bright leaf world, with its myriad workers, dollars and romance is typified by the chant of the auctioneer. Here also the Gallopade festival with its gala pageantry and the world famous annual June German dance are institutions of community pride. This friendly city with a council manager plan of government owns its public utility facilities consisting of water, gas, sewage and electric plants which are valued in excess of $6,000,000.

"It has a retail trade area of 60 miles with a population of 321,000. Rocky Mount schools, churches, hospitals, parks and other community facilities portray civic pride of a population that is 99.4 American born. Amid an environment of gracious living industry and agriculture have combined to enrich the entire area, making possible the expansion of Rocky Mount's restaurant industry. The local foodhandling industry's adaptation of progressive community trends has resulted in a better restaurant program.

"How have the results of this program effected compliance with the restaurant regulations? The last city-wide grade average was 6.8% higher than the grade average of a corresponding period three years ago. To the casual observer this may appear to be an insignificant increase. Yet to those with an insight into the foodhandling business it represents the elimination of many loopholes which could easily have been a threat to the community health. Among many other things this 6.8% increase represents properly sanitized dishes, adequate refrigeration, better premises maintenance and personnel observance of foodhandling do's and don'ts. It represents the difference between better health and potential epidemic.

"For instance, each food handling establishment in Rocky Mount is inspected monthly and graded quarterly by a representative of the city health

department. Since the North Carolina restaurant regulations conform to the U. S. Public Health Service Code the grading system is strict and impartial. Twenty four major items subdivided in sixty four items for grading consideration enable the sanitarian to determine an accurate numerical score for each establishment. Even though a food handling unit may be equipped and arranged to comply with every requirement of the restaurant regulations, sanitation is the determining factor.

"At this writing there is not a grade C restaurant in Rocky Mount.

"This community is no exception to the rule that education plays a major role in better foodhandling. For instance, education of the individual food handler in his or her place of employment relative to individual food handling problems has paid dividends. Right and wrong way demonstrations of dishwashing, food handling, food storage, equipment and premises maintenance have met with cordial response. Finally, food handlers courses sponsored by the City Health Department enable participants to earn a certificate of foodhandling merit. Rocky Mount restaurant operators have displayed keen interest in food handler education, utilizing this medium to promote better personnel-customer relations. Management realizes that regardless of investment, personnel can make or break a restaurant.

"When or where Rocky Mount's 'better restaurant' program will reach its zenith nobody knows. Extensive plans for additional renovation and expansion are now in the making. Restaurant sales in this city are practically nonexistent, indicating management satisfaction with business trends. Of one thing everyone is certain, customer insurance through the medium of safe food handling is cheap at any price. Local restaurant operators believe that a normal volume of business plus the dividends of better community health will be adequate compensation for the effort expended to build a bigger and better restaurant program.

"Thus the people who 'eat out' are assured that the wheels of progress in better foodhandling will continue to turn in Rocky Mount, North Carolina, through management, personnel and health department cooperation."

Here Is The Truth About Sterilization and North Carolina's Laws Concerning It

Human Betterment League of North Carolina, Incorporated
P. O. Box 3036, Winston-Salem, N. C.

A sterilized man or woman can lead a completely normal, satisfying sex life because **sterilization removes nothing from the body.** The simple operation merely closes the tiny passages through which the life-producing cells must travel. The cells are absorbed by the body and the functioning of the sex organs is not affected in any way.

North Carolina statutes provide special legal safeguards to prevent any abuse of this important law. A careful investigation is made by the North Carolina Eugenics Board of every case recommended by the heads of certain institutions, or by county superintendents of welfare. If the Board finds that sterilization is indicated it can order the operation performed at public expense.

Placing a helpless child in the care of mentally unbalanced or deficient

persons would be grossly unfair and could result in tragedy. No conscientious judge would permit a person suffering from mental illness or deficiency to adopt a child. It is equally tragic and unfair to permit children to be born to such parents, exposed to the double risk of questionable heredity and bad environment.

It is possible for insane or feebleminded parents to give birth to mentally normal children, but such children are often psychologically affected for life by their home surroundings. Children reared by mentally deficient parents start life with an environmental handicap from which they may never recover.

Mental cases occupy more than one-half of all the hospital beds in the State at an annual cost to the tax-payers of about $2,000,000. There are more persons in hospitals (2811 at the last report) suffering from the type of insanity known as schizophrenia (dementia praecox) than any other single disease! If insanity is permanent, sterilization can be extremely valuable in protecting its victims from undesirable parenthood.

Selective Service rejections because of mental disease or deficiency were high throughout the war. In 1942 they accounted for 14% and during 1944 for 48% of the North Carolina men found unfit for military service.

Insanity is mental illness, which frequently attacks persons who were entirely normal at birth. Medical science is learning more about ways to cure **some types** of insanity.

Feeblemindedness is not a disease and therefore cannot be cured. Feebleminded patients are born with defective mental equipment which cannot be changed any more than the color of their eyes can be altered. With proper training some individuals can be taught to be reasonably self-reliant. They may even be self-supporting after marriage if protected from the responsibility and cost of rearing a family. Feebleminded girls are particularly in need of the protection of sterilization since they cannot be expected to assume adequate moral or social responsibility for their actions.

Persons of low mentality are not less fertile than normally intelligent persons. Idiots and imbeciles seldom have either sexual or reproductive power, but morons, who far outnumber all other groups of mental defectives, are **doubling their number** with each generation.

If the patient or his family feel that the operation should not be performed, **appeal to the courts is possible.** However, in almost all cases the operation is welcomed when it is understood that there will be **no detectable physical or mental change** except that children will not be produced.

Diabetes Is More Prevalent in United States Than Commonly Supposed

Survey In One Typical American Community Reveals Three Unsuspected Cases For Every Four Cases Already Known

It is known that diabetes is increasing rapidly in the United States, but estimates as to its prevalence vary a great deal, since most of them are based on known cases of the disease. Recently the United States Public Health Service decided to test a typical American community, Oxford, Mass., for evidences of diabetes among its 4,983 inhabitants. More than 70 per cent of the population was tested—and two per cent of those tested had the disease! Furthermore, three hither-

to unknown and unsuspected cases of diabetes were found for every four which had already been diagnosed. Less than one half of these "new" cases were in an early or even a mild stage of the disease.

"Diabetes is much more prevalent than is commonly supposed," was the obvious conclusion, "with large numbers of unrecognized cases in every community."

The report on this study appears in the September 27 issue of **The Journal of the American Medical Association,** in an article by Hugh L. C. Wilkerson, M.D., and Leo P. Krall, M.D., of the United States Public Health Service in Boston. The authors point to the need for the wider application of simple, effective tests which will make it possible to discover and to treat early cases of diabetes before further progression and, possibly, dangerous complications have set in.

Diabetes mellitus is a chronic condition in which the pancreas does not produce enough insulin for the diabetic patient to get full benefit from his food. Much of this, particularly the carbohydrate, changes to sugar, which accumulates to excess in the blood and tissues and passes out of the body through the kidneys. Without proper treatment diabetes is a rapidly progressive disease, due to the constant wear and tear on the pancreas. Fifty years ago, before the discovery of insulin, patients lived an average of only three years. Only through the use of insulin and a suitable diet can the condition be controlled. Early diagnosis can therefore be considered a form of preventive medicine, particularly since recent evidence indicates the possibility that early pathologic changes in the pancreas are reversible.

In the Oxford study, specimens of urine and of blood from the veins were obtained from the townpeople about an hour after their midday or evening meals. Of the 4,983 citizens of Oxford, 70.6 per cent received this test. Forty revealed previously diagnosed diabetes, and their test reports were forwarded to their doctors. One hundred ninety-one others showed sugar in the urine, an excess of sugar in the blood, or both conditions, and they received a second test of urine and blood. A total of 39 dextrose tolerance tests were also given to those whose first and second tests didn't agree, whose tests were "borderline," or who showed one abnormal condition without the other.

In this way 30 previously undiagnosed cases of diabetes were found, plus 25 cases of unclassified glycosuria (sugar in the urine) or hyperglycemia (excess sugar in the blood). The patients were notified of an "abnormal condition" and advised to see their own family physicians, who were sent the results of the survey.

An analysis of the data gathered in the course of the survey shows that:

—The ages of the 30 newly discovered diabetic persons varied from 16 to 93, the median age being 55 years. Among the 40 known diabetic persons, the youngest was 19 and the oldest 78. The median age of this second group was 59.5 years.

—There were 31 men and 39 women in the series of cases. The small difference in prevalence between the two sexes was shown by the fact that 1.7 per cent of the men in Oxford were diabetic as compared with 1.8 per cent of the women. "This ratio is different from what might be expected," say the writers, "on the basis of general mortality data showing higher diabetes death rates for women than for men."

—A family history of diabetes was reported more often by diabetic than by nondiabetic persons. For those over 15 years of age, a family history of diabetes was reported by 38.6 per cent of the diabetic persons and 18.2 per cent of the nondiabetic.

—The occurrence of overweight at some period of their lives was reported by most of the diabetic persons: at the time of their maximum weight 20 of the 31 men and 30 of the 39 women had been overweight.

—On careful questioning, all but five of the new patients reported one or

more of the symptoms commonly associated with diabetes—cramps or pains in the limbs, excessive thirst, weight loss, excessive urination, intense itching, excessive eating, and fatigue. However, few had recognized the significance of their symptoms.

"For better public health control of the disease," Dr. Wilkerson and Dr. Krall point out, "there must be a greater realization by the public and the members of the medical profession of the prevalence of diabetes and the importance of early diagnosis."

Doctors Urged to Play Larger Role In Preventing Accidents

Only three diseases take bigger toll of lives in U. S.; 9,800,000 disabilities from accidents in one year.

In many ways doctors and health department personnel could be more effective than the police in preventing accidents, according to Edward Press, M.D., a pediatrician with public health training who is regional medical director of the U. S. Children's Bureau in Chicago. Writing in the November 29 issue of The Journal of the American Medical Association, Dr. Press observes that "any problem that confronts the physician with 9,800,000 injuries severe enough to cause disability in a single year in the United States urgently demands his attention." He points out that:

—In 1943 accidents were the leading cause of deaths in all children in the United States from one to 19 years of age.

—In 1944 accidents ranked fourth as a cause of death for the population as a whole, preceded only by heart disease, cancer and intracranial vascular episodes and still leading such notorious killers as tuberculosis, nephritis and pneumonia.

—It has been said that 90 per cent of all accidents are preventable, and one writer has expressed the opinion that four fifths of all accidents to children under five years of age are due to errors of omission or commission by adults.

—In 1945 motor vehicles caused only about one third of the accidental deaths. Almost one half of the others occurred in the home, where, the writer believes, safety hazards could be checked by visiting doctors, public health nurses and others in similar positions much more tactfully than by members of the police department.

Besides the standard methods of promoting safety Dr. Press suggests:

1. Taking advantage of occasions in which a doctor's patients would be most "psychologically receptive" to safety education; i.e., when a baby is being innoculated against the various communicable diseases, or when a patient is being treated for some minor injury due to accident. At such times the doctor might distribute a home safety check list to be filled out carefully and returned.

2. Reporting of "accident-prone" diseases, such as epilepsy, alcoholism or drug addiction, to the proper authorities. "By the revocation or denial of driver's licenses to persons with these diseases many accidents would be prevented," Dr. Press writes.

3. Requiring regular physical examination for driving, including regular and stereoscopic vision, hearing and reaction time.

4. The use by civilians of identification tags which would include such items as blood group, presence of serum sensitivity, abnormal bleeding tendency and tetanus immunization.

5. The registration and periodic inspection of bicycles with the requirement of certain safety essentials.

6. Treating children with unusual proclivities for accidents in psychiatric clinics.

7. Integrating an accident prevention program into the structure of a local or state health department.

8. More education in accident prevention technics for physicians and nurses at schools of public health. "Although hours and hours are spent on the prevention of communicable disease, the sanitation of water and milk and on nutrition . . . one observes a pronounced disproportion as far as instruction in accident prevention is concerned," Dr. Press comments.

Health Education Consultant

"Schools offer us a chance to disseminate the new health knowledge of science and put it to work for the whole population," according to an editorial in the September issue of **Hygeia**, published by the American Medical Association.

The writers, Dean F. Smiley, M.D., and Fred V. Hein, Ph.D., consultants in health and physical fitness of the Bureau of Health Education of the American Medical Association, point out how different from yesterday's school is the school that children are returning to this fall: "The modern school is as much concerned with the social and physical growth of children as it is with their mental development."

Nevertheless, they continue "greatly enriched programs of health and physical education are needed as integral parts of the curriculum. This requires vigorous action on the part of education and public health departments. It necessitates enlisting the help of medical and dental societies, parent-teacher associations, voluntary health agencies and certain civic organizations. Above all it demands the cooperation of all these community groups."

Such a program of health teaching should be carefully planned to suit the needs and interests of the individual pupil and should be made a part of everyday living, say the writers. "Emphasis should be given to enlarging the child's ability to assume increasing responsibility for his own health as he progresses from grade to grade," they add. As for physical education, "suitable activities can be provided for all the children without favoring the strong at the expense of those whose physical fitness needs are greatest."

"Only a healthy child can realize the maximum value from his school experiences," however. "The teacher and the nurse working together can make certain simple tests and inspections . . . which may show the need for referring a child to a specialist. . . . The school should lead the family to obtain diagnosis and treatment of defects that may be remedied. Health conditions that cannot be corrected may require modification of the child's school program or special education to aid him in adjustment to his handicap."

Dr. Smiley and Dr. Hein emphasize the importance of careful maintenance and repair of school buildings, too, for the physical aspects of the environment are important. "Poorly fitting school seats, unsanitary toilets, inadequate lighting, small, poorly surfaced schoolyards and the lack of playrooms and gymnasiums are only a few of the conditions that may create health hazards and prohibit suitable health and fitness programs."

The writers conclude: "Science has given us in recent years knowledge that should enable man to eradicate certain diseases, to curtail the death-dealing power of some and to premit long-term survival in the presence of additional disorders.